

DPW ENGINEERING DIVISION

TOWN OF LEXINGTON, MASSACHUSETTS

TOWN OF LEXINGTON, MASSACHUSETTS

**PAVEMENT PRESERVATION
(FOG SEAL)
CONTRACT # 25-99**

June 5, 2025

TOWN OF LEXINGTON, MASSACHUSETTS
INDEX SHEET
CONTRACT # 25-99

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**THE TOWN OF LEXINGTON, MASSACHUSETTS
INVITES PROPOSALS
PRESERVATION TREATMENTS OF VARIOUS ROADS CONTRACT # 25-99**

The Town of Lexington, Massachusetts, through its Town Manager, will receive bids for preservation work on existing streets in the Town of Lexington, Massachusetts, until **12:00 P.M.**, Local Time, **Thursday, June 5th** at the Town Office Building, 1625 Massachusetts Avenue, **Procurement Office**, Second Floor, Lexington, Massachusetts. A payment bond and performance bond of not less than the amount of the contract, with satisfactory surety, for faithfully doing the work will be required.

Plans and specifications that include the required bid forms can be viewed as PDF and ordered for printing at www.accentblueprints.com. A copy fee is charged for printed copies. They can be picked up at Accent Printing, 99 Chelmsford Rd, N. Billerica, MA 01862 (978-362-8038.) Copies can be shipped on order upon payment of handling and mailing fee.

The proposal must be filled out and signed as directed therein, sealed in an envelope addressed to the Town Manager, Lexington, Massachusetts, endorsed with the name and address of the bidder, and marked "Pavement Preservation Fog Seal", and left with either a bid bond in accordance with Chapter 30, Section 39M or a certified treasurer's or cashier's check issued by a responsible bank, for 5 percent of the bid for the proposed work payable to the Town of Lexington, Massachusetts, before **12:00 P.M.**, Local Time, **Thursday, June 5th in the OFFICE OF THE CHIEF PROCUREMENT OFFICER**. This check to be the property of said Town if the Bidder fails to execute the contract and satisfactory bond within ten (10) days after the contract may have been awarded to him.

Attention is called to the fact that State Prevailing Wage Rates are established for the project as set forth in the contract documents.

Proposals filled out and left, with check, as above directed and no others, will, at the above-named hour, be publicly opened and read at Town of Lexington Town Offices, 1625 Massachusetts Avenue, Lexington, Massachusetts. The undersigned reserves the right to reject any or all proposals, or to accept the proposal they deem best for the Town.

The bidder shall start the work under the contract within thirty (30) calendar days excluding Saturdays, Sundays, and Holidays, after the date of the contract.

No proposal may be withdrawn within thirty (30) days after the opening of bids.
All pre-bid questions concerning the contract documents and the work contained therein must be submitted in writing to, and received by, John Livsey P.E., Town Engineer, 201 Bedford Street, Lexington, MA 02420, before **Friday, May 30th 2025 by 12:00 PM**.

The Town of Lexington reserves the right to reject any and all bids if it be in the public interest to do so.

This contract is for one year renewable for up to two more years if mutually agreed upon by the Town and the successful bidder. The Town of Lexington reserves the right to reject any and all bids if it be in the public interest to do so

TOWN OF LEXINGTON,
MASSACHUSETTS
Elizabeth Mancini
Chief Procurement Officer
781-698-4628

TOWN OF LEXINGTON, MASSACHUSETTS INSTRUCTION TO BIDDERS

1. Receipt of Bids

The Town may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities in or reject any and all bids. Any bid may be withdrawn prior to the above-mentioned time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw his/her bid for a period of 30 days, excluding Saturdays, Sundays, and legal holidays after actual date of the opening thereof.

2. Preparation of Bid

Each bid shall be submitted on the forms attached to these documents. The bid forms shall not be removed and submitted separately from the other documents. All blank spaces for bid prices must be filled in with the unit price for the item or the lump sum for which the proposal is made. Bidders must bid on each item including the supplemental section. All entries in the entire proposal must be made clearly, and prices must be written in both words and figures in the spaces provided. The Town reserves the right to remove the supplemental bid from this contract.

3. Bid Submission

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his/her address, and the name of the project for which the bid is submitted, and the name and number of the Contract for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as follows:

Bid Documents
Town of Lexington-Procurement Office
PAVEMENT PRESERVATION (Fog Seal) #25-85
1625 Massachusetts Ave.
Lexington, MA 02420

Sealed bids will be accepted at **The Town Office Building, 1625 Massachusetts Ave., Lexington, MA 02420 until 12:00 pm on Thursday, June 5th 2025**. Specific delivery instructions are as follows:

- Bids sent via mail or courier should be addressed to Elizabeth Mancini, Purchasing Director, 1625 Massachusetts Ave, Lexington, MA 02420.**
- Bids that are hand-delivered should be deposited in the black lock-box labeled 'Procurement' located outside the Comptroller's Office within the Town Office Building**

The Owner will receive sealed bids until the time, and at the location designated in the Notice to Contractors. Bids received after this time will not be accepted. All interested parties are invited to attend; bids will be opened publicly and read aloud.

4. Bid Security

Every bid submitted by contractors shall be accompanied by a bid deposit in the form of cash, certified check, treasurer's or cashier's check, or a bid bond issued by a responsible bank or trust company and made payable to the Town of Lexington. The amount of the bid deposit shall be 5% of the amount of the bid. All security except those of the three lowest responsible and eligible bidders will be returned within five days, Saturdays, Sundays, and legal holidays excluded, after opening of the proposal. All bid securities will be returned on the execution of the contract or if no award is made within 30 days, excluding Saturdays, Sundays, and legal holidays, after the actual date of the opening thereof, unless forfeited under the conditions herein stipulated.

In case a party to whom a contract is awarded shall fail or neglect to execute the contract and furnish the satisfactory bond in the time specified, the Town may determine the bidder has abandoned the contract and thereupon the proposal and acceptance shall be null and void, and the bid security accompanying the proposal shall be forfeited to the Town as liquidation damages for such failure or neglect and indemnify the Town for any loss which may be sustained by failure of the bidder to execute the contract and furnish the bonds as aforesaid, provided that, in case of death, disability, or other unforeseen circumstances affecting the bidder, such bid security may be returned to him/her. After execution of the contract and acceptance of the bonds by the Town, the bid security accompanying the proposal of the successful bidder will be returned.

5. Time of Completion

The bidder must agree to commence work within the time specified in the contract documents, and to fully complete the project no later than October 15, 2025. See subsection 8.03, "Prosecution of Work" for sequence of completion.

6. Performance and Payment Bonds

A bond (performance bond) in the sum of the total amount (100%) of the Contract by the successful bidder and an additional bond in equal amount covering the payment for all labor and materials (payment bond) used in the work will be required. These bonds must be provided by a surety company that is listed with the Commonwealth of Massachusetts Approved Surety List. These bonds will be required at the execution of the contract. Attorneys-in-fact who sign contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

7. OSHA ten certification

All persons employed at the worksite must have successfully completed at least ten hours of an OSHA certified construction safety and health training. The 'Certificate of OSHA training of personnel' form attached in the contract must be signed and proof of training provided along with the first certified payroll.

8. Laws and Regulations

The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full.

9. Withdrawal of Bids

Except as hereinafter expressly provided, a bidder may not withdraw his bid until after thirty, (30) consecutive calendar days after the actual date of opening of Bids.

Upon proper written request and identification, Bids may be withdrawn only as follows:

1. At any time prior to the designated time for the opening of Bids.
2. Death or serious injury of a principal.
3. With the approval of the Town.
4. At any time after the expiration of the period during which withdrawal is prohibited provided the bid has not been accepted by the Town.

10. Execution of Contract

The party to whom the contract is awarded will be required to execute the contract and furnish the bonds duly executed with a satisfactory surety company within five days, excluding Saturdays, Sundays, and legal holidays, of the date of the mailing of the notice to the bidder according to the address given by him, that the contract is ready for execution.

11. Obligation of Bidder

At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the drawings and contract documents, including all referenced documents. The failure or omission of any bidder to receive or examine any form, instrument, or document shall in no way relieve any bidder from the obligation in respect to his bid.

11. Omissions, Discrepancies, Interpretations and Addenda

Should a bidder find discrepancies in, or omissions from, the drawings or contract documents, or should he/she have questions as to the interpretation of the plans or contract documents he/she shall submit such in writing to the Director of Public Works at least five days before the date herein set for the opening of bids. An interpretation will be mailed by certified mail to prospective bidders at the addresses given by them on or about two days before the opening of bids. Signed copies of all addenda shall be included with the bid. Omission of the signed addendum shall be cause for rejections of the bid.

12. Record of Address

Prospective bidders shall at the time the deposit is made and plans and specifications are secured, place on file with the Director of Public Works their address, and are required to make any changes necessary to ensure that the record is accurate, complete, and up to date.

13. Massachusetts Sales and Use Tax

Materials purchased for permanent installation in the work will be exempt from the Massachusetts Sales and Use tax. Each bidder shall take this exemption into account in calculating his/her bid for the work.

14. State Tax Affidavit

Prospective bidders are required to certify that all state tax returns have been filed and all state taxes have been paid in order to be eligible to enter into a contract with the Town on this project. The form in section 0500 is to be used for this purpose and is to be completed and returned as part of the bid and proposal.

15. Prevailing Wage Rates

Prevailing rates for wages for work performed under this Contract will be as predetermined by the Commissioner of Labor and Industries of the Commonwealth of Massachusetts in accordance with the provisions of Sections 26 to 27D, inclusive, of c.149 of M.G.L. A schedule of the prevailing wages is included in Prevailing Wage Rates Section 0300.

16. Sub-bids

No sub bids will be sought in connection with this Contract.

17. Bid Deposit

A bid deposit is not required to receive bids as they are distributed electronically. This DOES NOT exempt bidders from providing 5% bid security described in item 4 above.

18. Extension of Contract

The Town reserves the right extend this contract in one year increments for a period of up to three years for the purpose of performing additional work of a similar nature to the work as originally bid at the contract unit prices. Any extension of this contract must be made by mutual agreement between the Town and the Contractor.

TOWN OF LEXINGTON PREVAILING WAGE RATES

A schedule of Prevailing wage rates excerpted from that for "Mechanics, Apprentices, Teamsters, Chauffeurs, and Laborers" issued for this work by the Commissioner of Labor and Industries of Massachusetts, in accordance with Chapter 461, Acts of 1935.



**THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS**

Prevailing Wage Rates

MAURA HEALEY
Governor

KIM DRISCOLL
Lt. Governor

**As determined by the Director under the provisions of the
Massachusetts General Laws, Chapter 149, Sections 26 to 27H**

LAUREN JONES
Secretary

MICHAEL FLANAGAN
Director

Awarding Authority: Town of Lexington

Contract Number: # 25-99

City/Town: LEXINGTON

Description of Work: The work for this project includes, but is not limited to, fog seal and other miscellaneous work-related street improvement and preservation items.

Job Location: 201 Bedford St Lexington, Ma 02420

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, the awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. The updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.
- This annual update requirement is generally not applicable to 27F “rental of equipment” contracts. For such contracts, the prevailing wage rates issued by DLS shall remain in effect for the duration of the contract term. However, if the prevailing wage rate sheet issued does not contain wage rates for each year covered by the contract term, the Awarding Authority must request updated rate sheets from DLS and provide them to the contractor to ensure the correct rates are being paid throughout the duration of the contract. Additionally, if an Awarding Authority exercises an option to renew or extend the contract term, they must request updated rate sheets from DLS and provide them to the contractor.
- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the “Wage Request Number” on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or a sub-contractor.
- Apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentices must keep their apprentice identification card on their persons during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **Any apprentice not registered with DAS regardless of whether they are registered with another federal, state, local, or private agency must be paid the journeyworker's rate.**
- Every contractor or subcontractor working on the construction project must submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee's name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. For a sample payroll reporting form go to <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Contractors must obtain the wage schedules from awarding authorities. Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may file a complaint with the Fair Labor Division of the office of the Attorney General at (617) 727-3465.

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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2024	\$41.05	\$14.91	\$20.17	\$0.00	\$76.13
	06/01/2025	\$42.05	\$14.91	\$20.17	\$0.00	\$77.13
	08/01/2025	\$42.05	\$15.41	\$20.17	\$0.00	\$77.63
	12/01/2025	\$42.05	\$15.41	\$21.78	\$0.00	\$79.24
	06/01/2026	\$43.05	\$15.41	\$21.78	\$0.00	\$80.24
	08/01/2026	\$43.05	\$15.91	\$21.78	\$0.00	\$80.74
	12/01/2026	\$43.05	\$15.91	\$23.52	\$0.00	\$82.48
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2024	\$40.88	\$14.91	\$20.17	\$0.00	\$75.96
	06/01/2025	\$41.12	\$14.91	\$20.17	\$0.00	\$76.20
	08/01/2025	\$41.12	\$15.41	\$20.17	\$0.00	\$76.70
	12/01/2025	\$41.12	\$15.41	\$21.78	\$0.00	\$78.31
	06/01/2026	\$43.12	\$15.41	\$21.78	\$0.00	\$80.31
	08/01/2026	\$43.12	\$15.91	\$21.78	\$0.00	\$80.81
	12/01/2026	\$43.12	\$15.91	\$23.52	\$0.00	\$82.55
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2024	\$41.24	\$14.91	\$20.17	\$0.00	\$76.32
	06/01/2025	\$42.24	\$14.91	\$20.17	\$0.00	\$77.32
	08/01/2025	\$42.24	\$15.41	\$20.17	\$0.00	\$77.82
	12/01/2025	\$42.24	\$15.41	\$21.78	\$0.00	\$79.43
	06/01/2026	\$43.24	\$15.41	\$21.78	\$0.00	\$80.43
	08/01/2026	\$43.24	\$15.91	\$21.78	\$0.00	\$80.93
	12/01/2026	\$43.24	\$15.91	\$23.52	\$0.00	\$82.67
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	01/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$18.36	\$0.00	\$67.96
	06/01/2025	\$41.09	\$9.90	\$18.36	\$0.00	\$69.35
	12/01/2025	\$42.47	\$9.90	\$18.36	\$0.00	\$70.73
	06/01/2026	\$43.91	\$9.90	\$18.36	\$0.00	\$72.17
	12/01/2026	\$45.35	\$9.90	\$18.36	\$0.00	\$73.61
	06/01/2027	\$46.80	\$9.90	\$18.36	\$0.00	\$75.06
	12/01/2027	\$48.25	\$9.90	\$18.36	\$0.00	\$76.51
	06/01/2028	\$49.75	\$9.90	\$18.36	\$0.00	\$78.01
	12/01/2028	\$51.25	\$9.90	\$18.36	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.70	\$9.90	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.09	\$9.90	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.47	\$9.90	\$18.46	\$0.00	\$70.83
	06/01/2026	\$43.91	\$9.90	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.35	\$9.90	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2024	\$42.80	\$14.50	\$11.05	\$0.00	\$68.35
	06/01/2025	\$43.80	\$14.50	\$11.05	\$0.00	\$69.35
	12/01/2025	\$44.80	\$14.50	\$11.05	\$0.00	\$70.35

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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$18.36	\$0.00	\$67.96
	06/01/2025	\$41.09	\$9.90	\$18.36	\$0.00	\$69.35
	12/01/2025	\$42.47	\$9.90	\$18.36	\$0.00	\$70.73
	06/01/2026	\$43.91	\$9.90	\$18.36	\$0.00	\$72.17
	12/01/2026	\$45.35	\$9.90	\$18.36	\$0.00	\$73.61
	06/01/2027	\$46.80	\$9.90	\$18.36	\$0.00	\$75.06
	12/01/2027	\$48.25	\$9.90	\$18.36	\$0.00	\$76.51
	06/01/2028	\$49.75	\$9.90	\$18.36	\$0.00	\$78.01
	12/01/2028	\$51.25	\$9.90	\$18.36	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.70	\$9.90	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.09	\$9.90	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.47	\$9.90	\$18.46	\$0.00	\$70.83
	06/01/2026	\$43.91	\$9.90	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.35	\$9.90	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
2	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
3	70	\$33.68	\$7.07	\$14.23	\$0.00	\$54.98
4	75	\$36.09	\$7.07	\$15.24	\$0.00	\$58.40
5	80	\$38.50	\$7.07	\$16.25	\$0.00	\$61.82
6	85	\$40.90	\$7.07	\$17.28	\$0.00	\$65.25
7	90	\$43.31	\$7.07	\$18.28	\$0.00	\$68.66
8	95	\$45.71	\$7.07	\$19.32	\$0.00	\$72.10

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (WALTHAM)</i>	02/01/2025	\$65.80	\$11.49	\$23.59	\$0.00	\$100.88
	08/01/2025	\$67.95	\$11.49	\$23.59	\$0.00	\$103.03
	02/01/2026	\$69.30	\$11.49	\$23.59	\$0.00	\$104.38
	08/01/2026	\$71.50	\$11.49	\$23.59	\$0.00	\$106.58
	02/01/2027	\$72.90	\$11.49	\$23.59	\$0.00	\$107.98

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Waltham

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.90	\$11.49	\$23.59	\$0.00	\$67.98
2	60	\$39.48	\$11.49	\$23.59	\$0.00	\$74.56
3	70	\$46.06	\$11.49	\$23.59	\$0.00	\$81.14
4	80	\$52.64	\$11.49	\$23.59	\$0.00	\$87.72
5	90	\$59.22	\$11.49	\$23.59	\$0.00	\$94.30

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$33.98	\$11.49	\$23.59	\$0.00	\$69.06
2	60	\$40.77	\$11.49	\$23.59	\$0.00	\$75.85
3	70	\$47.57	\$11.49	\$23.59	\$0.00	\$82.65
4	80	\$54.36	\$11.49	\$23.59	\$0.00	\$89.44
5	90	\$61.16	\$11.49	\$23.59	\$0.00	\$96.24

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$47.35	\$9.90	\$19.05	\$0.00	\$76.30
	06/01/2025	\$48.85	\$9.90	\$19.05	\$0.00	\$77.80
	12/01/2025	\$50.35	\$9.90	\$19.05	\$0.00	\$79.30
	06/01/2026	\$51.90	\$9.90	\$19.05	\$0.00	\$80.85
	12/01/2026	\$53.40	\$9.90	\$19.05	\$0.00	\$82.35

For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.20	\$9.90	\$19.05	\$0.00	\$75.15
	06/01/2025	\$47.70	\$9.90	\$19.05	\$0.00	\$76.65
	12/01/2025	\$49.20	\$9.90	\$19.05	\$0.00	\$78.15
	06/01/2026	\$50.75	\$9.90	\$19.05	\$0.00	\$79.70
	12/01/2026	\$52.25	\$9.90	\$19.05	\$0.00	\$81.20

For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.53	\$9.90	\$19.05	\$0.00	\$75.48
	06/01/2025	\$48.03	\$9.90	\$19.05	\$0.00	\$76.98
	12/01/2025	\$49.53	\$9.90	\$19.05	\$0.00	\$78.48
	06/01/2026	\$51.08	\$9.90	\$19.05	\$0.00	\$80.03
	12/01/2026	\$52.58	\$9.90	\$19.05	\$0.00	\$81.53

For apprentice rates see "Apprentice- LABORER"

0300-6

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2025	\$49.62	\$9.83	\$19.97	\$0.00	\$79.42
	09/01/2025	\$50.87	\$9.83	\$19.97	\$0.00	\$80.67
	03/01/2026	\$52.12	\$9.83	\$19.97	\$0.00	\$81.92
	09/01/2026	\$53.37	\$9.83	\$19.97	\$0.00	\$83.17
	03/01/2027	\$54.62	\$9.83	\$19.97	\$0.00	\$84.42

Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
2	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
3	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
4	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
5	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
6	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
7	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77
8	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77

Effective Date - 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$22.89	\$9.83	\$1.73	\$0.00	\$34.45
2	45	\$22.89	\$9.83	\$1.73	\$0.00	\$34.45
3	55	\$27.98	\$9.83	\$3.40	\$0.00	\$41.21
4	55	\$27.98	\$9.83	\$3.40	\$0.00	\$41.21
5	70	\$35.61	\$9.83	\$16.51	\$0.00	\$61.95
6	70	\$35.61	\$9.83	\$16.51	\$0.00	\$61.95
7	80	\$40.70	\$9.83	\$18.24	\$0.00	\$68.77
8	80	\$40.70	\$9.83	\$18.24	\$0.00	\$68.77

Notes:

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME <i>CARPENTERS -ZONE 2 (Wood Frame)</i>	10/01/2024	\$31.91	\$7.02	\$6.47	\$0.00	\$45.40
	10/01/2025	\$33.21	\$7.02	\$6.47	\$0.00	\$46.70
0300-7	10/01/2026	\$34.51	\$7.02	\$6.47	\$0.00	\$48.00

Classification

	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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All Aspects of New Wood Frame Work

Apprentice - CARPENTER (Wood Frame) - Zone 2**Effective Date - 10/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.96	\$7.02	\$0.00	\$0.00	\$22.98
2	50	\$15.96	\$7.02	\$0.00	\$0.00	\$22.98
3	55	\$17.55	\$7.02	\$2.00	\$0.00	\$26.57
4	55	\$17.55	\$7.02	\$2.00	\$0.00	\$26.57
5	70	\$22.34	\$7.02	\$6.47	\$0.00	\$35.83
6	70	\$22.34	\$7.02	\$6.47	\$0.00	\$35.83
7	80	\$25.53	\$7.02	\$6.47	\$0.00	\$39.02
8	80	\$25.53	\$7.02	\$6.47	\$0.00	\$39.02

Effective Date - 10/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.61	\$7.02	\$0.00	\$0.00	\$23.63
2	50	\$16.61	\$7.02	\$0.00	\$0.00	\$23.63
3	55	\$18.27	\$7.02	\$2.00	\$0.00	\$27.29
4	55	\$18.27	\$7.02	\$2.00	\$0.00	\$27.29
5	70	\$23.25	\$7.02	\$6.47	\$0.00	\$36.74
6	70	\$23.25	\$7.02	\$6.47	\$0.00	\$36.74
7	80	\$26.57	\$7.02	\$6.47	\$0.00	\$40.06
8	80	\$26.57	\$7.02	\$6.47	\$0.00	\$40.06

Notes:**Apprentice to Journeyworker Ratio:1:5**

CEMENT MASONRY/PLASTERING
BRICKLAYERS LOCAL 3 (WALTHAM)

07/01/2024	\$49.19	\$13.35	\$24.21	\$1.80	\$88.55
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Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Waltham)

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.60	\$13.35	\$16.43	\$0.00	\$54.38
2	60	\$29.51	\$13.35	\$19.21	\$1.80	\$63.87
3	65	\$31.97	\$13.35	\$20.21	\$1.80	\$67.33
4	70	\$34.43	\$13.35	\$21.21	\$1.80	\$70.79
5	75	\$36.89	\$13.35	\$22.21	\$1.80	\$74.25
6	80	\$39.35	\$13.35	\$23.21	\$1.80	\$77.71
7	90	\$44.27	\$13.35	\$24.21	\$1.80	\$83.63

Notes:

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$58.18	\$15.55	\$16.50	\$0.00	\$90.23
	06/01/2025	\$59.51	\$15.55	\$16.50	\$0.00	\$91.56
	12/01/2025	\$60.98	\$15.55	\$16.50	\$0.00	\$93.03
	06/01/2026	\$62.31	\$15.55	\$16.50	\$0.00	\$94.36
	12/01/2026	\$63.79	\$15.55	\$16.50	\$0.00	\$95.84
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN LABORERS - ZONE 2	12/02/2024	\$46.25	\$9.90	\$18.90	\$0.00	\$75.05
	06/02/2025	\$47.75	\$9.90	\$18.90	\$0.00	\$76.55
	12/01/2025	\$49.25	\$9.90	\$18.90	\$0.00	\$78.05
	06/01/2026	\$50.80	\$9.90	\$18.90	\$0.00	\$79.60
	12/07/2026	\$52.30	\$9.90	\$18.90	\$0.00	\$81.10
	06/07/2027	\$53.90	\$9.90	\$18.90	\$0.00	\$82.70
	12/06/2027	\$55.50	\$9.90	\$18.90	\$0.00	\$84.30
	06/05/2028	\$57.18	\$9.90	\$18.90	\$0.00	\$85.98
	12/04/2028	\$58.85	\$9.90	\$18.90	\$0.00	\$87.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	12/02/2024	\$47.25	\$9.90	\$18.90	\$0.00	\$76.05
	06/02/2025	\$48.75	\$9.90	\$18.90	\$0.00	\$77.55
	12/01/2025	\$50.25	\$9.90	\$18.90	\$0.00	\$79.05
	06/01/2026	\$51.80	\$9.90	\$18.90	\$0.00	\$80.60
	12/07/2026	\$53.30	\$9.90	\$18.90	\$0.00	\$82.10
	06/07/2027	\$54.90	\$9.90	\$18.90	\$0.00	\$83.70
	12/06/2027	\$56.50	\$9.90	\$18.90	\$0.00	\$85.30
	06/05/2028	\$58.18	\$9.90	\$18.90	\$0.00	\$86.98
	12/04/2028	\$59.85	\$9.90	\$18.90	\$0.00	\$88.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 2	12/02/2024	\$47.00	\$9.90	\$18.90	\$0.00	\$75.80
	06/02/2025	\$48.50	\$9.90	\$18.90	\$0.00	\$77.30
	12/01/2025	\$50.00	\$9.90	\$18.90	\$0.00	\$78.80
	06/01/2026	\$51.55	\$9.90	\$18.90	\$0.00	\$80.35
	12/07/2026	\$53.05	\$9.90	\$18.90	\$0.00	\$81.85
	06/07/2027	\$54.65	\$9.90	\$18.90	\$0.00	\$83.45
	12/06/2027	\$56.25	\$9.90	\$18.90	\$0.00	\$85.05
	06/05/2028	\$57.93	\$9.90	\$18.90	\$0.00	\$86.73
0300-10	12/04/2028	\$59.60	\$9.90	\$18.90	\$0.00	\$88.40

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	12/02/2024	\$47.25	\$9.90	\$18.90	\$0.00	\$76.05
	06/02/2025	\$48.75	\$9.90	\$18.90	\$0.00	\$77.55
	12/01/2025	\$50.25	\$9.90	\$18.90	\$0.00	\$79.05
	06/01/2026	\$51.80	\$9.90	\$18.90	\$0.00	\$80.60
	12/07/2026	\$53.30	\$9.90	\$18.90	\$0.00	\$82.10
	06/07/2027	\$54.90	\$9.90	\$18.90	\$0.00	\$83.70
	12/06/2027	\$56.50	\$9.90	\$18.90	\$0.00	\$85.30
	06/05/2028	\$58.18	\$9.90	\$18.90	\$0.00	\$86.98
	12/04/2028	\$59.85	\$9.90	\$18.90	\$0.00	\$88.65
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	12/02/2024	\$47.00	\$9.90	\$18.90	\$0.00	\$75.80
	06/02/2025	\$48.50	\$9.90	\$18.90	\$0.00	\$77.30
	12/01/2025	\$50.00	\$9.90	\$18.90	\$0.00	\$78.80
	06/01/2026	\$51.55	\$9.90	\$18.90	\$0.00	\$80.35
	12/07/2026	\$53.05	\$9.90	\$18.90	\$0.00	\$81.85
	06/07/2027	\$54.65	\$9.90	\$18.90	\$0.00	\$83.45
	12/06/2027	\$56.25	\$9.90	\$18.90	\$0.00	\$85.05
	06/05/2028	\$57.93	\$9.90	\$18.90	\$0.00	\$86.73
	12/04/2028	\$59.60	\$9.90	\$18.90	\$0.00	\$88.40
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	12/02/2024	\$46.25	\$9.90	\$18.90	\$0.00	\$75.05
	06/02/2025	\$47.75	\$9.90	\$18.90	\$0.00	\$76.55
	12/01/2025	\$49.25	\$9.90	\$18.90	\$0.00	\$78.05
	06/01/2026	\$50.80	\$9.90	\$18.90	\$0.00	\$79.60
	12/07/2026	\$52.30	\$9.90	\$18.90	\$0.00	\$81.10
	06/07/2027	\$53.90	\$9.90	\$18.90	\$0.00	\$82.70
	12/06/2027	\$55.50	\$9.90	\$18.90	\$0.00	\$84.30
	06/05/2028	\$57.18	\$9.90	\$18.90	\$0.00	\$85.98
	12/04/2028	\$58.85	\$9.90	\$18.90	\$0.00	\$87.65
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$78.11	\$10.08	\$21.66	\$0.00	\$109.85
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Diver wage 70/80/90 2A \$69.83, 3A \$91.79,4A \$102.14 Total Rate						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$55.79	\$10.08	\$24.29	\$0.00	\$90.16
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Piledriver wage 70/80/90 2A \$54.20, 3A \$73.93,4A \$82.05 Total Rate						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$83.69	\$10.08	\$24.29	\$0.00	\$118.06
For apprentice rates see "Apprentice- PILE DRIVER"						

0300-11

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN <i>ELECTRICIANS LOCAL 103</i>						
	03/01/2025	\$64.26	\$13.00	\$23.03	\$0.00	\$100.29
	09/01/2025	\$66.17	\$13.00	\$23.09	\$0.00	\$102.26
	03/01/2026	\$67.37	\$13.00	\$23.12	\$0.00	\$103.49
	09/01/2026	\$69.28	\$13.00	\$23.18	\$0.00	\$105.46
	03/01/2027	\$70.47	\$13.00	\$23.21	\$0.00	\$106.68
	09/01/2027	\$72.39	\$13.00	\$23.27	\$0.00	\$108.66
	03/01/2028	\$73.59	\$13.00	\$23.31	\$0.00	\$109.90

Apprentice - ELECTRICIAN - Local 103

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$25.70	\$13.00	\$0.77	\$0.00	\$39.47
2	40	\$25.70	\$13.00	\$0.77	\$0.00	\$39.47
3	45	\$28.92	\$13.00	\$17.17	\$0.00	\$59.09
4	45	\$28.92	\$13.00	\$17.17	\$0.00	\$59.09
5	50	\$32.13	\$13.00	\$17.70	\$0.00	\$62.83
6	55	\$35.34	\$13.00	\$18.24	\$0.00	\$66.58
7	60	\$38.56	\$13.00	\$18.77	\$0.00	\$70.33
8	65	\$41.77	\$13.00	\$19.30	\$0.00	\$74.07
9	70	\$44.98	\$13.00	\$19.83	\$0.00	\$77.81
10	75	\$48.20	\$13.00	\$20.37	\$0.00	\$81.57

Effective Date - 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$26.47	\$13.00	\$0.79	\$0.00	\$40.26
2	40	\$26.47	\$13.00	\$0.79	\$0.00	\$40.26
3	45	\$29.78	\$13.00	\$17.19	\$0.00	\$59.97
4	45	\$29.78	\$13.00	\$17.19	\$0.00	\$59.97
5	50	\$33.09	\$13.00	\$17.73	\$0.00	\$63.82
6	55	\$36.39	\$13.00	\$18.27	\$0.00	\$67.66
7	60	\$39.70	\$13.00	\$18.80	\$0.00	\$71.50
8	65	\$43.01	\$13.00	\$19.34	\$0.00	\$75.35
9	70	\$46.32	\$13.00	\$19.87	\$0.00	\$79.19
10	75	\$49.63	\$13.00	\$20.41	\$0.00	\$83.04

Notes:

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86
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0300-12

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - ELEVATOR CONSTRUCTOR - Local 4

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.81	\$16.03	\$0.00	\$0.00	\$48.84
2	55	\$36.09	\$16.03	\$20.21	\$0.00	\$72.33
3	65	\$42.65	\$16.03	\$20.21	\$0.00	\$78.89
4	70	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
5	80	\$52.50	\$16.03	\$20.21	\$0.00	\$88.74

Notes:

Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$51.78	\$15.30	\$16.40	\$0.00	\$83.48
	05/01/2025	\$53.22	\$15.30	\$16.40	\$0.00	\$84.92
	11/01/2025	\$54.51	\$15.30	\$16.40	\$0.00	\$86.21
	05/01/2026	\$55.95	\$15.30	\$16.40	\$0.00	\$87.65
	11/01/2026	\$57.24	\$15.30	\$16.40	\$0.00	\$88.94
	05/01/2027	\$58.67	\$15.30	\$16.40	\$0.00	\$90.37

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$53.37	\$15.30	\$16.40	\$0.00	\$85.07
	05/01/2025	\$54.82	\$15.30	\$16.40	\$0.00	\$86.52
	11/01/2025	\$56.12	\$15.30	\$16.40	\$0.00	\$87.82
	05/01/2026	\$57.57	\$15.30	\$16.40	\$0.00	\$89.27
	11/01/2026	\$58.87	\$15.30	\$16.40	\$0.00	\$90.57
	05/01/2027	\$60.32	\$15.30	\$16.40	\$0.00	\$92.02

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
	05/01/2025	\$26.22	\$15.30	\$16.40	\$0.00	\$57.92
	11/01/2025	\$26.98	\$15.30	\$16.40	\$0.00	\$58.68
	05/01/2026	\$27.83	\$15.30	\$16.40	\$0.00	\$59.53
	11/01/2026	\$28.59	\$15.30	\$16.40	\$0.00	\$60.29
	05/01/2027	\$29.44	\$15.30	\$16.40	\$0.00	\$61.14

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	03/01/2025	\$64.26	\$13.00	\$23.03	\$0.00	\$100.29
	09/01/2025	\$66.17	\$13.00	\$23.09	\$0.00	\$102.26
	03/01/2026	\$67.37	\$13.00	\$23.12	\$0.00	\$103.49
	09/01/2026	\$69.28	\$13.00	\$23.18	\$0.00	\$105.46
	03/01/2027	\$70.47	\$13.00	\$23.21	\$0.00	\$106.68
	09/01/2027	\$72.39	\$13.00	\$23.27	\$0.00	\$108.66
	03/01/2028	\$73.59	\$13.00	\$23.31	\$0.00	\$109.90
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS LOCAL 103</i>	03/01/2025	\$51.41	\$13.00	\$20.90	\$0.00	\$85.31
	09/01/2025	\$52.94	\$13.00	\$20.95	\$0.00	\$86.89
	03/01/2026	\$53.90	\$13.00	\$20.98	\$0.00	\$87.88
	09/01/2026	\$55.42	\$13.00	\$21.02	\$0.00	\$89.44
	03/01/2027	\$56.38	\$13.00	\$21.05	\$0.00	\$90.43
	09/01/2027	\$57.91	\$13.00	\$21.10	\$0.00	\$92.01
	03/01/2028	\$58.87	\$13.00	\$21.13	\$0.00	\$93.00
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$45.96	\$15.55	\$16.50	\$0.00	\$78.01
	06/01/2025	\$47.02	\$15.55	\$16.50	\$0.00	\$79.07
	12/01/2025	\$48.19	\$15.55	\$16.50	\$0.00	\$80.24
	06/01/2026	\$49.25	\$15.55	\$16.50	\$0.00	\$81.30
	12/01/2026	\$50.43	\$15.55	\$16.50	\$0.00	\$82.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$27.01	\$9.90	\$18.46	\$0.00	\$55.37
	06/01/2025	\$28.09	\$9.90	\$18.46	\$0.00	\$56.45
	12/01/2025	\$28.09	\$9.90	\$18.46	\$0.00	\$56.45
	06/01/2026	\$29.21	\$9.90	\$18.46	\$0.00	\$57.57
	12/01/2026	\$29.21	\$9.90	\$18.46	\$0.00	\$57.57
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE I</i>	03/01/2025	\$57.73	\$8.83	\$20.27	\$0.00	\$86.83
	09/01/2025	\$59.23	\$8.83	\$20.27	\$0.00	\$88.33
	03/01/2026	\$60.73	\$8.83	\$20.27	\$0.00	\$89.83
	09/01/2026	\$62.23	\$8.83	\$20.27	\$0.00	\$91.33
	03/01/2027	\$63.73	\$8.83	\$20.27	\$0.00	\$92.83

0300-14

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - FLOORCOVERER - Local 2168 Zone I

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$25.98	\$8.83	\$1.76	\$0.00	\$36.57
2	45	\$25.98	\$8.83	\$1.76	\$0.00	\$36.57
3	55	\$31.75	\$8.83	\$3.52	\$0.00	\$44.10
4	55	\$31.75	\$8.83	\$3.52	\$0.00	\$44.10
5	70	\$40.41	\$8.83	\$16.75	\$0.00	\$65.99
6	70	\$40.41	\$8.83	\$16.75	\$0.00	\$65.99
7	80	\$46.18	\$8.83	\$18.51	\$0.00	\$73.52
8	80	\$46.18	\$8.83	\$18.51	\$0.00	\$73.52

Effective Date - 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$26.65	\$8.83	\$1.76	\$0.00	\$37.24
2	45	\$26.65	\$8.83	\$1.76	\$0.00	\$37.24
3	55	\$32.58	\$8.83	\$3.52	\$0.00	\$44.93
4	55	\$32.58	\$8.83	\$3.52	\$0.00	\$44.93
5	70	\$41.46	\$8.83	\$16.75	\$0.00	\$67.04
6	70	\$41.46	\$8.83	\$16.75	\$0.00	\$67.04
7	80	\$47.38	\$8.83	\$18.51	\$0.00	\$74.72
8	80	\$47.38	\$8.83	\$18.51	\$0.00	\$74.72

Notes: Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86
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0300-15

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS OPERATING ENGINEERS LOCAL 4	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58

0300-16

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$31.37	\$0.00	\$0.00	\$0.00	\$31.37
2	60	\$34.22	\$15.55	\$16.50	\$0.00	\$66.27
3	65	\$37.07	\$15.55	\$16.50	\$0.00	\$69.12
4	70	\$39.92	\$15.55	\$16.50	\$0.00	\$71.97
5	75	\$42.77	\$15.55	\$16.50	\$0.00	\$74.82
6	80	\$45.62	\$15.55	\$16.50	\$0.00	\$77.67
7	85	\$48.48	\$15.55	\$16.50	\$0.00	\$80.53
8	90	\$51.33	\$15.55	\$16.50	\$0.00	\$83.38

Effective Date - 06/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$32.08	\$0.00	\$0.00	\$0.00	\$32.08
2	60	\$35.00	\$15.55	\$16.50	\$0.00	\$67.05
3	65	\$37.91	\$15.55	\$16.50	\$0.00	\$69.96
4	70	\$40.83	\$15.55	\$16.50	\$0.00	\$72.88
5	75	\$43.75	\$15.55	\$16.50	\$0.00	\$75.80
6	80	\$46.66	\$15.55	\$16.50	\$0.00	\$78.71
7	85	\$49.58	\$15.55	\$16.50	\$0.00	\$81.63
8	90	\$52.50	\$15.55	\$16.50	\$0.00	\$84.55

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2025	\$59.13	\$14.91	\$28.27	\$2.98	\$105.29
	08/01/2025	\$60.98	\$14.91	\$28.27	\$2.98	\$107.14
	02/01/2026	\$62.93	\$14.91	\$28.27	\$2.98	\$109.09

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 103</i>	03/01/2025	\$64.26	\$13.00	\$23.03	\$0.00	\$100.29
	09/01/2025	\$66.17	\$13.00	\$23.09	\$0.00	\$102.26
	03/01/2026	\$67.37	\$13.00	\$23.12	\$0.00	\$103.49
	09/01/2026	\$69.28	\$13.00	\$23.18	\$0.00	\$105.46
	03/01/2027	\$70.47	\$13.00	\$23.21	\$0.00	\$106.68
	09/01/2027	\$72.39	\$13.00	\$23.27	\$0.00	\$108.66
	03/01/2028	\$73.59	\$13.00	\$23.31	\$0.00	\$109.90

For apprentice rates see "Apprentice- ELECTRICIAN"

HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2025	\$59.13	\$14.91	\$28.27	\$2.98	\$105.29
	08/01/2025	\$60.98	\$14.91	\$28.27	\$2.98	\$107.14
	02/01/2026	\$62.93	\$14.91	\$28.27	\$2.98	\$109.09

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (TESTING AND BALANCING -WATER) <i>PIPEFITTERS LOCAL 537</i>	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38
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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

0300-17

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$18.36	\$0.00	\$67.96
	06/01/2025	\$41.09	\$9.90	\$18.36	\$0.00	\$69.35
	12/01/2025	\$42.47	\$9.90	\$18.36	\$0.00	\$70.73
	06/01/2026	\$43.91	\$9.90	\$18.36	\$0.00	\$72.17
	12/01/2026	\$45.35	\$9.90	\$18.36	\$0.00	\$73.61
	06/01/2027	\$46.80	\$9.90	\$18.36	\$0.00	\$75.06
	12/01/2027	\$48.25	\$9.90	\$18.36	\$0.00	\$76.51
	06/01/2028	\$49.75	\$9.90	\$18.36	\$0.00	\$78.01
	12/01/2028	\$51.25	\$9.90	\$18.36	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.70	\$9.90	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.09	\$9.90	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.47	\$9.90	\$18.46	\$0.00	\$70.83
	06/01/2026	\$43.91	\$9.90	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.35	\$9.90	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2024	\$56.92	\$14.75	\$19.61	\$0.00	\$91.28
	09/01/2025	\$60.34	\$14.75	\$19.61	\$0.00	\$94.70
	09/01/2026	\$63.76	\$14.75	\$19.61	\$0.00	\$98.12

Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.46	\$14.75	\$14.32	\$0.00	\$57.53
2	60	\$34.15	\$14.75	\$15.37	\$0.00	\$64.27
3	70	\$39.84	\$14.75	\$16.43	\$0.00	\$71.02
4	80	\$45.54	\$14.75	\$17.49	\$0.00	\$77.78

Effective Date - 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.17	\$14.75	\$14.32	\$0.00	\$59.24
2	60	\$36.20	\$14.75	\$15.37	\$0.00	\$66.32
3	70	\$42.24	\$14.75	\$16.43	\$0.00	\$73.42
4	80	\$48.27	\$14.75	\$17.49	\$0.00	\$80.51

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (BOSTON AREA)</i>	03/16/2024	\$53.97	\$8.35	\$26.70	\$0.00	\$89.02
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0300-18

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - IRONWORKER - Local 7 Boston

Effective Date - 03/16/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$32.38	\$8.35	\$26.70	\$0.00	\$67.43
2	70	\$37.78	\$8.35	\$26.70	\$0.00	\$72.83
3	75	\$40.48	\$8.35	\$26.70	\$0.00	\$75.53
4	80	\$43.18	\$8.35	\$26.70	\$0.00	\$78.23
5	85	\$45.87	\$8.35	\$26.70	\$0.00	\$80.92
6	90	\$48.57	\$8.35	\$26.70	\$0.00	\$83.62

Notes:

Apprentice to Journeyworker Ratio:1:4

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 2	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 2	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76

0300-19

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - LABORER - Zone 2

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.37	\$9.90	\$18.36	\$0.00	\$51.63
2	70	\$27.27	\$9.90	\$18.36	\$0.00	\$55.53
3	80	\$31.16	\$9.90	\$18.36	\$0.00	\$59.42
4	90	\$35.06	\$9.90	\$18.36	\$0.00	\$63.32

Effective Date - 06/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.20	\$9.90	\$18.36	\$0.00	\$52.46
2	70	\$28.24	\$9.90	\$18.36	\$0.00	\$56.50
3	80	\$32.27	\$9.90	\$18.36	\$0.00	\$60.53
4	90	\$36.31	\$9.90	\$18.36	\$0.00	\$64.57

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER (HEAVY & HIGHWAY)	12/01/2024	\$38.95	\$9.90	\$18.46	\$0.00	\$67.31
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2025	\$40.34	\$9.90	\$18.46	\$0.00	\$68.70
	12/01/2025	\$41.72	\$9.90	\$18.46	\$0.00	\$70.08
	06/01/2026	\$43.16	\$9.90	\$18.46	\$0.00	\$71.52
	12/01/2026	\$44.60	\$9.90	\$18.46	\$0.00	\$72.96

Apprentice - LABORER (Heavy & Highway) - Zone 2

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.37	\$9.90	\$18.46	\$0.00	\$51.73
2	70	\$27.27	\$9.90	\$18.46	\$0.00	\$55.63
3	80	\$31.16	\$9.90	\$18.46	\$0.00	\$59.52
4	90	\$35.06	\$9.90	\$18.46	\$0.00	\$63.42

Effective Date - 06/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.20	\$9.90	\$18.46	\$0.00	\$52.56
2	70	\$28.24	\$9.90	\$18.46	\$0.00	\$56.60
3	80	\$32.27	\$9.90	\$18.46	\$0.00	\$60.63
4	90	\$36.31	\$9.90	\$18.46	\$0.00	\$64.67

Notes:

Apprentice to Journeyworker Ratio:1:5

0300-20

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CARPENTER TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	12/02/2024	\$39.04	\$9.90	\$18.42	\$0.00	\$67.36
	06/02/2025	\$40.43	\$9.90	\$18.42	\$0.00	\$68.75
	12/01/2025	\$41.81	\$9.90	\$18.42	\$0.00	\$70.13
	06/01/2026	\$43.25	\$9.90	\$18.42	\$0.00	\$71.57
	12/07/2026	\$44.69	\$9.90	\$18.42	\$0.00	\$73.01
	06/07/2027	\$46.14	\$9.90	\$18.42	\$0.00	\$74.46
	12/06/2027	\$47.59	\$9.90	\$18.42	\$0.00	\$75.91
	06/05/2028	\$49.09	\$9.90	\$18.42	\$0.00	\$77.41
	12/04/2028	\$50.59	\$9.90	\$18.42	\$0.00	\$78.91
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

0300-21

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	02/01/2025	\$50.36	\$11.49	\$21.62	\$0.00	\$83.47
	08/01/2025	\$52.08	\$11.49	\$21.62	\$0.00	\$85.19
	02/01/2026	\$53.16	\$11.49	\$21.62	\$0.00	\$86.27
	08/01/2026	\$54.92	\$11.49	\$21.62	\$0.00	\$88.03
	02/01/2027	\$56.04	\$11.49	\$21.62	\$0.00	\$89.15

0300-22

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.18	\$11.49	\$21.62	\$0.00	\$58.29
2	60	\$30.22	\$11.49	\$21.62	\$0.00	\$63.33
3	70	\$35.25	\$11.49	\$21.62	\$0.00	\$68.36
4	80	\$40.29	\$11.49	\$21.62	\$0.00	\$73.40
5	90	\$45.32	\$11.49	\$21.62	\$0.00	\$78.43

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.04	\$11.49	\$21.62	\$0.00	\$59.15
2	60	\$31.25	\$11.49	\$21.62	\$0.00	\$64.36
3	70	\$36.46	\$11.49	\$21.62	\$0.00	\$69.57
4	80	\$41.66	\$11.49	\$21.62	\$0.00	\$74.77
5	90	\$46.87	\$11.49	\$21.62	\$0.00	\$79.98

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS,TILELAYERS & TERRAZZO MECH BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2025	\$65.82	\$11.49	\$23.56	\$0.00	\$100.87
	08/01/2025	\$67.97	\$11.49	\$23.56	\$0.00	\$103.02
	02/01/2026	\$69.32	\$11.49	\$23.56	\$0.00	\$104.37
	08/01/2026	\$71.52	\$11.49	\$23.56	\$0.00	\$106.57
	02/01/2027	\$72.92	\$11.49	\$23.56	\$0.00	\$107.97

0300-23

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.91	\$11.49	\$23.56	\$0.00	\$67.96
2	60	\$39.49	\$11.49	\$23.56	\$0.00	\$74.54
3	70	\$46.07	\$11.49	\$23.56	\$0.00	\$81.12
4	80	\$52.66	\$11.49	\$23.56	\$0.00	\$87.71
5	90	\$59.24	\$11.49	\$23.56	\$0.00	\$94.29

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$33.99	\$11.49	\$23.56	\$0.00	\$69.04
2	60	\$40.78	\$11.49	\$23.56	\$0.00	\$75.83
3	70	\$47.58	\$11.49	\$23.56	\$0.00	\$82.63
4	80	\$54.38	\$11.49	\$23.56	\$0.00	\$89.43
5	90	\$61.17	\$11.49	\$23.56	\$0.00	\$96.22

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 1) <i>MILLWRIGHTS LOCAL 1121 - Zone 1</i>	01/06/2025	\$50.53	\$10.08	\$21.72	\$0.00	\$82.33
	01/05/2026	\$53.03	\$10.08	\$21.72	\$0.00	\$84.83

0300-24

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - MILLWRIGHT - Local 1121 Zone 1

Effective Date - 01/06/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$27.79	\$10.08	\$5.64	\$0.00	\$43.51
2	65	\$32.84	\$10.08	\$6.66	\$0.00	\$49.58
3	75	\$37.90	\$10.08	\$19.16	\$0.00	\$67.14
4	85	\$42.95	\$10.08	\$20.18	\$0.00	\$73.21

Effective Date - 01/05/2026

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$29.17	\$10.08	\$5.64	\$0.00	\$44.89
2	65	\$34.47	\$10.08	\$6.66	\$0.00	\$51.21
3	75	\$39.77	\$10.08	\$19.16	\$0.00	\$69.01
4	85	\$45.08	\$10.08	\$20.18	\$0.00	\$75.34

Notes: Step 1&2 Appr. indentured after 1/6/2020 receive no pension,
but do receive annuity. (Step 1 \$5.72, Step 2 \$6.66)
Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:4

MORTAR MIXER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
	06/01/2025	\$25.97	\$15.30	\$16.40	\$0.00	\$57.67
	12/01/2025	\$26.63	\$15.30	\$16.40	\$0.00	\$58.33
	06/01/2026	\$27.22	\$15.30	\$16.40	\$0.00	\$58.92
	12/01/2026	\$27.89	\$15.30	\$16.40	\$0.00	\$59.59

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$31.08	\$15.30	\$16.40	\$0.00	\$62.78
	06/01/2025	\$31.80	\$15.30	\$16.40	\$0.00	\$63.50
	12/01/2025	\$32.60	\$15.30	\$16.40	\$0.00	\$64.30
	06/01/2026	\$33.32	\$15.30	\$16.40	\$0.00	\$65.02
	12/01/2026	\$34.12	\$15.30	\$16.40	\$0.00	\$65.82

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36
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Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2025	\$49.36	\$9.95	\$23.95	\$0.00	\$83.26
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 2</i>						

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.68	\$9.95	\$0.00	\$0.00	\$34.63
2	55	\$27.15	\$9.95	\$6.66	\$0.00	\$43.76
3	60	\$29.62	\$9.95	\$7.26	\$0.00	\$46.83
4	65	\$32.08	\$9.95	\$7.87	\$0.00	\$49.90
5	70	\$34.55	\$9.95	\$20.32	\$0.00	\$64.82
6	75	\$37.02	\$9.95	\$20.93	\$0.00	\$67.90
7	80	\$39.49	\$9.95	\$21.53	\$0.00	\$70.97
8	90	\$44.42	\$9.95	\$22.74	\$0.00	\$77.11

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

0300-26

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER (SPRAY OR SANDBLAST, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$47.42	\$9.95	\$23.95	\$0.00	\$81.32

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.71	\$9.95	\$0.00	\$0.00	\$33.66
2	55	\$26.08	\$9.95	\$6.66	\$0.00	\$42.69
3	60	\$28.45	\$9.95	\$7.26	\$0.00	\$45.66
4	65	\$30.82	\$9.95	\$7.87	\$0.00	\$48.64
5	70	\$33.19	\$9.95	\$20.32	\$0.00	\$63.46
6	75	\$35.57	\$9.95	\$20.93	\$0.00	\$66.45
7	80	\$37.94	\$9.95	\$21.53	\$0.00	\$69.42
8	90	\$42.68	\$9.95	\$22.74	\$0.00	\$75.37

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, NEW) *	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 2</i>						

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$46.02	\$9.95	\$23.95	\$0.00	\$79.92
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Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.01	\$9.95	\$0.00	\$0.00	\$32.96
2	55	\$25.31	\$9.95	\$6.66	\$0.00	\$41.92
3	60	\$27.61	\$9.95	\$7.26	\$0.00	\$44.82
4	65	\$29.91	\$9.95	\$7.87	\$0.00	\$47.73
5	70	\$32.21	\$9.95	\$20.32	\$0.00	\$62.48
6	75	\$34.52	\$9.95	\$20.93	\$0.00	\$65.40
7	80	\$36.82	\$9.95	\$21.53	\$0.00	\$68.30
8	90	\$41.42	\$9.95	\$22.74	\$0.00	\$74.11

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$38.95	\$9.90	\$18.46	\$0.00	\$67.31
	06/01/2025	\$40.34	\$9.90	\$18.46	\$0.00	\$68.70
	12/01/2025	\$41.72	\$9.90	\$18.46	\$0.00	\$70.08
	06/01/2026	\$43.16	\$9.90	\$18.46	\$0.00	\$71.52
	12/01/2026	\$44.60	\$9.90	\$18.46	\$0.00	\$72.96
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2024	\$40.88	\$14.91	\$20.17	\$0.00	\$75.96
	06/01/2025	\$41.88	\$14.91	\$20.17	\$0.00	\$76.96
	08/01/2025	\$41.88	\$15.41	\$20.17	\$0.00	\$77.46
	12/01/2025	\$41.88	\$15.41	\$21.78	\$0.00	\$79.07
	06/01/2026	\$42.88	\$15.41	\$21.78	\$0.00	\$80.07
	08/01/2026	\$42.88	\$15.91	\$21.78	\$0.00	\$80.57
	12/01/2026	\$42.88	\$15.91	\$23.52	\$0.00	\$82.31
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$55.79	\$10.08	\$24.29	\$0.00	\$90.16
For apprentice rates see "Apprentice- PILE DRIVER"						
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2024	\$55.79	\$10.08	\$24.29	\$0.00	\$90.16

0300-28

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PILE DRIVER - Local 56 Zone I

Effective Date - 08/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$25.11	\$10.08	\$2.53	\$0.00	\$37.72
2	55	\$30.68	\$10.08	\$5.07	\$0.00	\$45.83
3	70	\$39.05	\$10.08	\$19.22	\$0.00	\$68.35
4	80	\$44.63	\$10.08	\$21.76	\$0.00	\$76.47

Notes:

% Indentured BEFORE 8/1/20; 50/60/70/75/80/80/90/90

Apprentice to Journeyworker Ratio: 1.5

PIPEFITTER & STEAMFITTER
PIPEFITTERS LOCAL 537

03/01/2025 \$68.88 \$12.70 \$21.80 \$0.00 \$103.38

Apprentice - PIPEFITTER - Local 537

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$27.55	\$12.70	\$9.05	\$0.00	\$49.30
2	45	\$31.00	\$12.70	\$21.80	\$0.00	\$65.50
3	60	\$41.33	\$12.70	\$21.80	\$0.00	\$75.83
4	70	\$48.22	\$12.70	\$21.80	\$0.00	\$82.72
5	80	\$55.10	\$12.70	\$21.80	\$0.00	\$89.60

Notes:

** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.

Refrig/AC Mechanic **1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

Apprentice to Journeyworker Ratio:**

PIPELAYER LABORERS - ZONE 2	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

0300-29

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PLUMBERS & GASFITTERS <i>PLUMBERS & GASFITTERS LOCAL 12</i>	03/02/2025	\$69.84	\$14.32	\$20.31	\$0.00	\$104.47

Apprentice - PLUMBER/GASFITTER - Local 12

Effective Date - 03/02/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$24.44	\$14.32	\$7.41	\$0.00	\$46.17
2	40	\$27.94	\$14.32	\$8.42	\$0.00	\$50.68
3	55	\$38.41	\$14.32	\$11.47	\$0.00	\$64.20
4	65	\$45.40	\$14.32	\$13.50	\$0.00	\$73.22
5	75	\$52.38	\$14.32	\$15.53	\$0.00	\$82.23

Notes:

** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr

Step4 with lic\$76.49 tot.rate, Step5 with lic. \$85.32 tot. rate

Apprentice to Journeyworker Ratio:**

PNEUMATIC CONTROLS (TEMP.) <i>PIPEFITTERS LOCAL 537</i>	03/01/2025	\$68.88	\$12.70	\$21.80	\$0.00	\$103.38
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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$17.54	\$0.00	\$67.14
	06/01/2025	\$41.09	\$9.90	\$17.54	\$0.00	\$68.53
	12/01/2025	\$42.47	\$9.90	\$17.54	\$0.00	\$69.91
	06/01/2026	\$43.91	\$9.90	\$17.54	\$0.00	\$71.35
	12/01/2026	\$45.35	\$9.90	\$17.54	\$0.00	\$72.79
	06/01/2027	\$46.80	\$9.90	\$17.54	\$0.00	\$74.24
	12/01/2027	\$48.25	\$9.90	\$17.54	\$0.00	\$75.69
	06/01/2028	\$49.75	\$9.90	\$17.54	\$0.00	\$77.19
	12/01/2028	\$51.25	\$9.90	\$17.54	\$0.00	\$78.69

For apprentice rates see "Apprentice- LABORER"

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.95	\$9.90	\$18.36	\$0.00	\$68.21
	06/01/2025	\$41.34	\$9.90	\$18.36	\$0.00	\$69.60
	12/01/2025	\$42.72	\$9.90	\$18.36	\$0.00	\$70.98
	06/01/2026	\$44.16	\$9.90	\$18.36	\$0.00	\$72.42
	12/01/2026	\$45.60	\$9.90	\$18.36	\$0.00	\$73.86
	06/01/2027	\$47.05	\$9.90	\$18.36	\$0.00	\$75.31
	12/01/2027	\$48.50	\$9.90	\$18.36	\$0.00	\$76.76
	06/01/2028	\$50.00	\$9.90	\$18.36	\$0.00	\$78.26
	12/01/2028	\$51.50	\$9.90	\$18.36	\$0.00	\$79.76

For apprentice rates see "Apprentice- LABORER"

0300-30

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.95	\$9.65	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.34	\$9.65	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.72	\$9.65	\$18.46	\$0.00	\$70.83
	06/01/2026	\$44.16	\$9.65	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.60	\$9.65	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY MIX CONCRETE DRIVERS after 4/30/12 <i>(Drivers Hired After 4/30/2012) TEAMSTERS 25 (Suburban) - Aggregate</i>	08/01/2022	\$30.40	\$11.91	\$15.25	\$0.00	\$57.56
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 25 (Suburban) - Aggregate</i>	08/01/2022	\$30.50	\$11.91	\$15.25	\$0.00	\$57.66
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						

0300-31

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

ROOFER (Inc.Roofers Waterproofng &Roofers Damproofg) <i>ROOFERS LOCAL 33</i>	02/01/2025	\$52.03	\$13.28	\$21.70	\$0.00	\$87.01
	08/01/2025	\$53.53	\$13.28	\$21.70	\$0.00	\$88.51
	02/01/2026	\$54.78	\$13.28	\$21.70	\$0.00	\$89.76

Apprentice - ROOFER - Local 33

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.02	\$13.28	\$15.55	\$0.00	\$54.85
2	60	\$31.22	\$13.28	\$21.70	\$0.00	\$66.20
3	65	\$33.82	\$13.28	\$21.70	\$0.00	\$68.80
4	75	\$39.02	\$13.28	\$21.70	\$0.00	\$74.00
5	85	\$44.23	\$13.28	\$21.70	\$0.00	\$79.21

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.77	\$13.28	\$15.55	\$0.00	\$55.60
2	60	\$32.12	\$13.28	\$21.70	\$0.00	\$67.10
3	65	\$34.79	\$13.28	\$21.70	\$0.00	\$69.77
4	75	\$40.15	\$13.28	\$21.70	\$0.00	\$75.13
5	85	\$45.50	\$13.28	\$21.70	\$0.00	\$80.48

Notes: ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1

Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.

(Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	02/01/2025	\$52.28	\$13.28	\$21.70	\$0.00	\$87.26
	08/01/2025	\$53.78	\$13.28	\$21.70	\$0.00	\$88.76
	02/01/2026	\$55.03	\$13.28	\$21.70	\$0.00	\$90.01

For apprentice rates see "Apprentice- ROOFER"

SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2025	\$59.13	\$14.91	\$28.27	\$2.98	\$105.29
	08/01/2025	\$60.98	\$14.91	\$28.27	\$2.98	\$107.14
	02/01/2026	\$62.93	\$14.91	\$28.27	\$2.98	\$109.09

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - SHEET METAL WORKER - Local 17-A

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$24.83	\$14.91	\$6.13	\$0.00	\$45.87
2	42	\$24.83	\$14.91	\$6.13	\$0.00	\$45.87
3	47	\$27.79	\$14.91	\$12.26	\$1.62	\$56.58
4	47	\$27.79	\$14.91	\$12.26	\$1.62	\$56.58
5	52	\$30.75	\$14.91	\$13.24	\$1.74	\$60.64
6	52	\$30.75	\$14.91	\$13.49	\$1.75	\$60.90
7	60	\$35.48	\$14.91	\$14.90	\$1.93	\$67.22
8	65	\$38.43	\$14.91	\$15.88	\$2.04	\$71.26
9	75	\$44.35	\$14.91	\$17.84	\$2.28	\$79.38
10	85	\$50.26	\$14.91	\$19.30	\$2.49	\$86.96

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$25.61	\$14.91	\$6.13	\$0.00	\$46.65
2	42	\$25.61	\$14.91	\$6.13	\$0.00	\$46.65
3	47	\$28.66	\$14.91	\$12.26	\$1.62	\$57.45
4	47	\$28.66	\$14.91	\$12.26	\$1.62	\$57.45
5	52	\$31.71	\$14.91	\$13.24	\$1.74	\$61.60
6	52	\$31.71	\$14.91	\$13.49	\$1.75	\$61.86
7	60	\$36.59	\$14.91	\$14.90	\$1.93	\$68.33
8	65	\$39.64	\$14.91	\$15.88	\$2.04	\$72.47
9	75	\$45.74	\$14.91	\$17.84	\$2.28	\$80.77
10	85	\$51.83	\$14.91	\$19.30	\$2.49	\$88.53

Notes:

Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SPECIALIZED EARTH MOVING EQUIP < 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE A	12/01/2024	\$41.34	\$14.91	\$20.17	\$0.00	\$76.42
	06/01/2025	\$42.34	\$14.91	\$20.17	\$0.00	\$77.42
	08/01/2025	\$42.34	\$15.41	\$20.17	\$0.00	\$77.92
	12/01/2025	\$42.34	\$15.41	\$21.78	\$0.00	\$79.53
	06/01/2026	\$43.34	\$15.41	\$21.78	\$0.00	\$80.53
	08/01/2026	\$43.34	\$15.91	\$21.78	\$0.00	\$81.03
	12/01/2026	\$43.34	\$15.91	\$23.52	\$0.00	\$82.77

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2024	\$41.63	\$14.91	\$20.17	\$0.00	\$76.71
	06/01/2025	\$42.63	\$14.91	\$20.17	\$0.00	\$77.71
	08/01/2025	\$42.63	\$15.41	\$20.17	\$0.00	\$78.21
	12/01/2025	\$42.63	\$15.41	\$21.78	\$0.00	\$79.82
	06/01/2026	\$43.63	\$15.41	\$21.78	\$0.00	\$80.82
	08/01/2026	\$43.63	\$15.91	\$21.78	\$0.00	\$81.32
	12/01/2026	\$43.63	\$15.91	\$23.52	\$0.00	\$83.06
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>	03/01/2025	\$72.14	\$11.51	\$23.80	\$0.00	\$107.45

Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$25.25	\$11.51	\$13.07	\$0.00	\$49.83
2	40	\$28.86	\$11.51	\$13.90	\$0.00	\$54.27
3	45	\$32.46	\$11.51	\$14.73	\$0.00	\$58.70
4	50	\$36.07	\$11.51	\$15.55	\$0.00	\$63.13
5	55	\$39.68	\$11.51	\$16.37	\$0.00	\$67.56
6	60	\$43.28	\$11.51	\$17.20	\$0.00	\$71.99
7	65	\$46.89	\$11.51	\$18.03	\$0.00	\$76.43
8	70	\$50.50	\$11.51	\$18.85	\$0.00	\$80.86
9	75	\$54.11	\$11.51	\$19.67	\$0.00	\$85.29
10	80	\$57.71	\$11.51	\$20.50	\$0.00	\$89.72

Notes: Apprentice entered prior 9/30/10:

40/45/50/55/60/65/70/75/80/85

Steps are 850 hours

Apprentice to Journeyworker Ratio:1:3

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 103</i>	03/01/2025	\$51.41	\$13.00	\$20.90	\$0.00	\$85.31
	09/01/2025	\$52.94	\$13.00	\$20.95	\$0.00	\$86.89
	03/01/2026	\$53.90	\$13.00	\$20.98	\$0.00	\$87.88
	09/01/2026	\$55.42	\$13.00	\$21.02	\$0.00	\$89.44
	03/01/2027	\$56.38	\$13.00	\$21.05	\$0.00	\$90.43
	09/01/2027	\$57.91	\$13.00	\$21.10	\$0.00	\$92.01
	03/01/2028	\$58.87	\$13.00	\$21.13	\$0.00	\$93.00

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$23.13	\$13.00	\$0.69	\$0.00	\$36.82
2	45	\$23.13	\$13.00	\$0.69	\$0.00	\$36.82
3	50	\$25.71	\$13.00	\$16.64	\$0.00	\$55.35
4	50	\$25.71	\$13.00	\$16.64	\$0.00	\$55.35
5	55	\$28.28	\$13.00	\$17.07	\$0.00	\$58.35
6	60	\$30.85	\$13.00	\$17.50	\$0.00	\$61.35
7	65	\$33.42	\$13.00	\$17.92	\$0.00	\$64.34
8	70	\$35.99	\$13.00	\$18.35	\$0.00	\$67.34
9	75	\$38.56	\$13.00	\$18.78	\$0.00	\$70.34
10	80	\$41.13	\$13.00	\$19.19	\$0.00	\$73.32

Effective Date - 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$23.82	\$13.00	\$0.71	\$0.00	\$37.53
2	45	\$23.82	\$13.00	\$0.71	\$0.00	\$37.53
3	50	\$26.47	\$13.00	\$16.66	\$0.00	\$56.13
4	50	\$26.47	\$13.00	\$16.66	\$0.00	\$56.13
5	55	\$29.12	\$13.00	\$17.09	\$0.00	\$59.21
6	60	\$31.76	\$13.00	\$17.52	\$0.00	\$62.28
7	65	\$34.41	\$13.00	\$17.95	\$0.00	\$65.36
8	70	\$37.06	\$13.00	\$18.38	\$0.00	\$68.44
9	75	\$39.71	\$13.00	\$18.81	\$0.00	\$71.52
10	80	\$42.35	\$13.00	\$19.23	\$0.00	\$74.58

Notes:

Apprentice to Journeyworker Ratio:1:1

TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	02/01/2025	\$64.74	\$11.49	\$23.59	\$0.00	\$99.82
	08/01/2025	\$66.89	\$11.49	\$23.59	\$0.00	\$101.97
	02/01/2026	\$68.24	\$11.49	\$23.59	\$0.00	\$103.32
	08/01/2026	\$70.44	\$11.49	\$23.59	\$0.00	\$105.52
	02/01/2027	\$71.84	\$11.49	\$23.59	\$0.00	\$106.92

0300-35

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.37	\$11.49	\$23.59	\$0.00	\$67.45
2	60	\$38.84	\$11.49	\$23.59	\$0.00	\$73.92
3	70	\$45.32	\$11.49	\$23.59	\$0.00	\$80.40
4	80	\$51.79	\$11.49	\$23.59	\$0.00	\$86.87
5	90	\$58.27	\$11.49	\$23.59	\$0.00	\$93.35

Effective Date - 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$33.45	\$11.49	\$23.59	\$0.00	\$68.53
2	60	\$40.13	\$11.49	\$23.59	\$0.00	\$75.21
3	70	\$46.82	\$11.49	\$23.59	\$0.00	\$81.90
4	80	\$53.51	\$11.49	\$23.59	\$0.00	\$88.59
5	90	\$60.20	\$11.49	\$23.59	\$0.00	\$95.28

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$50.20	\$9.90	\$19.05	\$0.00	\$79.15
	06/01/2025	\$51.70	\$9.90	\$19.05	\$0.00	\$80.65
	12/01/2025	\$53.20	\$9.90	\$19.05	\$0.00	\$82.15
	06/01/2026	\$54.75	\$9.90	\$19.05	\$0.00	\$83.70
	12/01/2026	\$56.25	\$9.90	\$19.05	\$0.00	\$85.20

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.32	\$9.90	\$19.05	\$0.00	\$75.27
	06/01/2025	\$47.82	\$9.90	\$19.05	\$0.00	\$76.77
	12/01/2025	\$49.32	\$9.90	\$19.05	\$0.00	\$78.27
	06/01/2026	\$50.87	\$9.90	\$19.05	\$0.00	\$79.82
	12/01/2026	\$52.37	\$9.90	\$19.05	\$0.00	\$81.32

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.20	\$9.90	\$19.05	\$0.00	\$75.15
	06/01/2025	\$47.70	\$9.90	\$19.05	\$0.00	\$76.65
	12/01/2025	\$49.20	\$9.90	\$19.05	\$0.00	\$78.15
	06/01/2026	\$50.75	\$9.90	\$19.05	\$0.00	\$79.70
	12/01/2026	\$52.25	\$9.90	\$19.05	\$0.00	\$81.20

For apprentice rates see "Apprentice- LABORER"

TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

0300-36

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2024	\$41.92	\$14.91	\$20.17	\$0.00	\$77.00
	06/01/2025	\$42.92	\$14.91	\$20.17	\$0.00	\$78.00
	08/01/2025	\$42.92	\$15.41	\$20.17	\$0.00	\$78.50
	12/01/2025	\$42.92	\$15.41	\$21.78	\$0.00	\$80.11
	06/01/2026	\$43.92	\$15.41	\$21.78	\$0.00	\$81.11
	08/01/2026	\$43.92	\$15.91	\$21.78	\$0.00	\$81.61
	12/01/2026	\$43.92	\$15.91	\$23.52	\$0.00	\$83.35
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2024	\$58.43	\$9.90	\$19.50	\$0.00	\$87.83
	06/01/2025	\$59.93	\$9.90	\$19.50	\$0.00	\$89.33
	12/01/2025	\$61.43	\$9.90	\$19.50	\$0.00	\$90.83
	06/01/2026	\$62.98	\$9.90	\$19.50	\$0.00	\$92.38
	12/01/2026	\$64.48	\$9.90	\$19.50	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2024	\$60.43	\$9.90	\$19.50	\$0.00	\$89.83
	06/01/2025	\$61.93	\$9.90	\$19.50	\$0.00	\$91.33
	12/01/2025	\$63.43	\$9.90	\$19.50	\$0.00	\$92.83
	06/01/2026	\$64.98	\$9.90	\$19.50	\$0.00	\$94.38
	12/01/2026	\$66.48	\$9.90	\$19.50	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$50.50	\$9.90	\$19.50	\$0.00	\$79.90
	06/01/2025	\$52.00	\$9.90	\$19.50	\$0.00	\$81.40
	12/01/2025	\$53.50	\$9.90	\$19.50	\$0.00	\$82.90
	06/01/2026	\$55.05	\$9.90	\$19.50	\$0.00	\$84.45
	12/01/2026	\$56.55	\$9.90	\$19.50	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$52.50	\$9.90	\$19.50	\$0.00	\$81.90
	06/01/2025	\$54.00	\$9.90	\$19.50	\$0.00	\$83.40
	12/01/2025	\$55.50	\$9.90	\$19.50	\$0.00	\$84.90
	06/01/2026	\$57.05	\$9.90	\$19.50	\$0.00	\$86.45
	12/01/2026	\$58.55	\$9.90	\$19.50	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2024	\$41.34	\$14.91	\$20.17	\$0.00	\$76.42
	06/01/2025	\$42.34	\$14.91	\$20.17	\$0.00	\$77.42
	08/01/2025	\$42.34	\$15.41	\$20.17	\$0.00	\$77.92
	12/01/2025	\$42.34	\$15.41	\$21.78	\$0.00	\$79.53
	06/01/2026	\$43.34	\$15.41	\$21.78	\$0.00	\$80.53
	08/01/2026	\$43.34	\$15.91	\$21.78	\$0.00	\$81.03
	12/01/2026	\$43.34	\$15.91	\$23.52	\$0.00	\$82.77

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & GASFITTERS LOCAL 12</i>	03/02/2025	\$69.84	\$14.32	\$20.31	\$0.00	\$104.47
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

Additional Apprentice Information:

All apprentices must be registered with the Division of Apprenticeship Training (DAS) in accordance with M.G.L. c. 23, §§ 11E-11L. Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the hourly prevailing wage rate established by the Commissioner under the provisions of M.G.L. c. 149, §§ 26-27D. Apprentice ratios are established by DAS pursuant to M.G.L. c. 23, §§ 11E-11L. Ratios are expressed as the allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified. The ratios listed herein have been taken from relevant private collective bargaining agreements (CBAs) and are provided for illustrative purposes only. They have not been independently verified as being accurate or continuing to be accurate. Parties having questions regarding what ratio to use should contact DAS.

LOCATION AND SCOPE OF WORK

PAVEMENT PRESERVATION

CONTRACT # 25-99

1. DESCRIPTION OF THE PROJECT

The work for this project includes, but is not limited to, fog seal and other miscellaneous work-related street improvement and preservation items.

2. LOCATION OF PROJECT

The work is to be performed in various areas in the Town of Lexington including, but not limited to, locations as shown in the table below.

3. SCOPE OF WORK

The work under this contract consists of furnishing all necessary labor, materials, equipment and services to complete roadway preservation improvements as described herein under the PAVEMENT PRESERVATION (FOG SEAL) CONTRACT # 25-99. The work includes but is not limited to, fog seal and various other related street improvement and preservation items

All work done under this contract shall be in conformance with the Commonwealth of Massachusetts Department of Public Works **STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2023 (Blue Book)**, 1992 AASHTO SPECIFICATIONS FOR HIGHWAYS AND BRIDGES WITH INTERIMS THROUGH 1994, MHD BRIDGE MANUAL PART I AND PART II, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-89) OR LATER, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES 2009 EDITION, THE DECEMBER 2016 MASSDOT CONSTRUCTION STANDARD DETAILS, , THE AMERICAN WATER WORKS ASSOCIATION STANDARD FOR THE INSTALLATION OF DUCTILE-IRON WATER MAINS AND THEIR APPURTENANCES, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE LATEST PUBLIC RIGHTS OF WAY GUIDELINES FOR PEDESTRIAN FACILITIES (PROWAG), the **PLANS** and these **SPECIAL PROVISIONS** and attached **CONSTRUCTION DETAILS**.

- Patching may be necessary prior to paving roadways and will be determined and marked out by the engineer
- The contractor will be responsible for removing all material from sewer and drainage structures at the project closeout at no expense to the town. The contractor will be paid to clean all structures at the beginning of work at unit pricing included in this contract.
- Street sweeping shall be by mechanical street sweeper vehicle to clear the paved surface of all debris, to the extent as determined by the engineer.
- Use of the services at the towns composting facility can be negotiated directly with the Environmental Services Division. Please contact Robert M. Beaudoin, Superintendent of Environmental Services, at 781-274-8334. For leasing of space, receiving of material, and

purchasing of loam and gravel. The contract makes no guarantee that services of this facility will be available.

- The hours of operation will be restricted to a normal eight-hour day (7:00 AM to 3:00 PM) Monday through Friday. Modifications to this schedule will be discussed on a case by case basis with the resident engineer. All work will be suspended by 5:00 PM, per Town by-law
- Additional work outside of that shown on the attached map
- maybe added (or work deleted) in other areas of the town which may include driveway aprons, patching, etc....
- **The contractor will provide all required work zone and detour signs and barricades.**
- The contractor shall coordinate and pay the police details under the bid. The owner will reimburse the contractor directly for those payments with no overhead and profit on the police detail lump sum allowance item.
- It is the responsibility of the general contractor to obtain a staging area for all equipment and materials needed for construction activity

FOG SEAL ROADS 2025

Street	From	To	Length (Ft)	Width (Ft)	Area (Sy)	Treatment
Adams St	Town Line	North Ave	293.00	25	813.89	Fog
Benjamin Rd	Concord Ave	Concord Ave	1,207.00	24	3,218.67	Fog
Bicentennial Dr	End	Cary Ave	1,112.00	24	2,965.33	Fog
Briggs Rd	End	Crescent Rd	395.00	24	1,053.33	Fog
Cary Ave	Shade St	Middle St	1,962.00	25	5,450.00	Fog
Chandler St	Oakland St	Meriam St	693.00	21	1,617.00	Fog
Coolidge Ave	Hancock St	Adams St	1,545.00	28	4,806.67	Fog
Crescent Rd	Green Ln	Watertown St	1,154.00	24	3,077.33	Fog
Cushing St	Sullivan St	End	495.00	24	1,320.00	Fog
Downing Rd	Outlook Dr	Marrett Rd	1,469.00	24	3,917.33	Fog
Elena Rd	End	Marrett Rd	697.00	30	2,323.33	Fog
Eliot Rd	Tavern Ln	Pelham St	344.00	24	917.33	Fog
Ewell Ave	Deering Ave	Eastern Ave	982.00	24	2,618.67	Fog
Follen Rd	Up to 2020 Paving Limits	Marrett Rd	4,174.00	30	13,913.33	Fog
Freeman Cir	End	Bicentennial Dr	404.00	24	1,077.33	Fog
Grapevine Ave	Kendall Rd	Waltham St	1,204.00	25	3,344.44	Fog
Hancock St	Burlington St	Adams St	2,664.00	28	8,288.00	Fog
Harding Rd	Williams Rd	Bedford St	1,050.00	29	3,383.33	Fog
Hill St	Cedar St	Bedford St	3,963.00	27	11,889.00	Fog
Holand St	End	Taft Ave	300.00	18	600.00	Fog
John Benson Rd	Carriage Dr	Volunteer Way	901.00	24	2,402.67	Fog
Larchmount Ln	# 11 Larchmont Ln	Revere St	359.00	18	718.00	Fog
Middleby Rd	Outlook Dr	Lincoln St	1,721.00	26	4,971.78	Fog
Militia Dr	End	Worthen Rd	934.00	32	3,320.89	Fog
North St	Carl Rd	Adams St	827.00	20	1,837.78	Fog
Oakland St	Glen Rd South	Meriam St	1,795.00	24	4,786.67	Fog
Outlook Dr	Accepted Limits of Outlook	Prospect Hill Rd	460.00	24	1,226.67	Fog
Outlook Dr	Accepted Limits of Outlook	Loring Rd	250.00	24	666.67	Fog
Pelham Rd	Mass Ave	Warren St	1,364.00	24	3,637.33	Fog
Proctect Hill Rd	Wachusett Dr	Marrett Rd	1,315.00	24	3,506.67	Fog
Rangeway	Volunteer Way	Skyview Rd	195.00	20	433.33	Fog
Revere St	Bedford St	Hancock St	2,016.00	23	5,152.00	Fog

FOG SEAL ROADS 2025

Street	From	To	Length (Ft)	Width (Ft)	Area (Sy)	Treatment
Ryder Ln	End	Worthen Rd	570.00	24	1,520.00	Fog
Skyview Rd	John Benson Rd	Rangeway	916.00	24	2,442.67	Fog
Smith Ave	Follen Rd	Independence Ave	803.00	27	2,409.00	Fog
Stetson St	Oakland St	Meriam St	678.00	27	2,034.00	Fog
Taft Ave	Ellis St	Mass Ave	2,554.00	22	6,243.11	Fog
Tricorne Rd	End	Marrett Rd	563.00	24	1,501.33	Fog
Tuft Rd	Fairbanks Rd	Marrett Rd	1,899.00	24	5,064.00	Fog
Whipple Rd	End	Lowell St	2,534.00	24	6,757.33	Fog
White P Ln	End	Mason St	775.00	24	2,066.67	Fog
Winchester Dr	Town Line	Lowell St	3,658.00	28	11,380.44	Fog
Worthen	Waltham	Kendall Rd	1,380.00	43.5	6,670.00	Fog
Wright St	James St	Skyview Rd	340.00	24	906.67	Fog

PROPOSAL TO
TOWN OF LEXINGTON, MASSACHUSETTS
PAVEMENT PRESERVATION CONTRACT # 25-99

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals. The undersigned further certifies that the only persons or parties interested in this proposal as principals are as stated, that he/she has carefully examined the Information for Bidders, Contract, Specifications, Contract Drawings, all as prepared by the office of the Town Engineer; that he/she has informed himself/herself fully in regard to all conditions pertaining to the work and the place where it is to be done, and from them the undersigned makes this Proposal. These prices shall cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

If written notice of the acceptance of this bid is mailed, or otherwise delivered to the undersigned within 30 days, excluding Saturdays, Sundays, and legal holidays, after the date of opening the bid, the undersigned will within five days, excluding Saturdays, Sundays, and legal holidays, after the date of such notification, execute and deliver a Contract in the form attached thereto, together with a performance bond, and payment bond, each of a surety company qualified to do business under the laws of the State and furnished by a company satisfactory to the Town. The premiums for these bonds shall be paid by the General Contractor and shall be included in the Contract price. The Undersigned further agrees that the bid security accompanying this Proposal shall become the property of the Town, if the bidder fails to execute the Contract as stated above.

The undersigned hereby agrees to commence work under this Contract within 10 working days of the execution of the Contract. The bidder acknowledges receipt of the following addenda numbered:

In accordance with the above understanding, the undersigned proposes to do all of the work, furnish all of the materials, and complete the work in its entirety in the manner and under the conditions required at the prices listed as follows:

I certify under the penalties of perjury that I, to my best knowledge and belief, have filed all state tax returns and paid all state taxes required under law.

Signature of Individual* By Corporate Office or
Corporate Name (Mandatory, if Applicable)
(Mandatory)

Social Security # ** (Voluntary) or Federal
Identification Number

* Approval of a contract or other agreement will not be granted unless this certification clause is signed by the applicant.

** Your social security number will be furnished to the Massachusetts Department of Revenue to determine whether you have met tax filing or tax payment obligations. Bidders who fail to correct their non-filing or delinquency will not have a contract or other agreement issued, renewed, or extended. This request is made under the authority of Mass. G.L. c. 62C s. 49A.

BID FORM

ITEM	QUANTITY	ITEMS AND UNIT PRICES	UNIT PRICES (\$)	AMOUNT (\$)
9	158,250.00	DELTA MIST PENETRATING ASPHALT REJUVENATOR AT		
		PER SQUARE YARD		
49	200	ROADWAY FLAGGER AT	\$ 65.00	
		PER MAN HOUR		
50	469	POLICE DETAIL AT	\$ 65.00	
		PER MAN HOUR		

PAGE SUBTOTAL: _____

*Indeterminate - quantity assumed for bid comparison only.

PAVEMENT PRESERVATION (FOG SEAL) CONTRACT # 25-99

TOTAL BID PRICE

DATE

(Name of general Bidder)

SEAL (if Bid by a Corporation

(Title)

ATTEST

(Business Address)

(City and State)

(Telephone number)

NOTE: If the General Bidder is a corporation, indicate State of corporation under signature and affix corporate seal; if a partnership, give full name and residential address of all partners; and if an individual gives residential address if different from business

TOWN OF LEXINGTON PAVEMENT PRESERVATION CONTRACT # 25-99

THIS AGREEMENT, made the _____ day of _____, 20____, by and between the Town of Lexington, Massachusetts acting through its Town Manager, hereinafter called the Town and

with legal address and principal place of business at

hereinafter called the Contractor.

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the Town, the Contractor hereby agrees with the Town to commence PAVEMENT PRESERVATION #25-85, hereinafter called the project, for the consideration set forth in the proposal and all extra work in connection therewith, under the terms as stated in the conditions of the contract; and at his/her own proper cost and expense to furnish all materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the proposal, the specifications, and drawings prepared therefor and as enumerated on the table of contents sheet, all of which are made a part hereof and collectively evidence and constitute the contract.

The Contractor hereby agrees to commence work under this contract within ten working days of the execution of this contract and to fully complete the project within the time specified in section 0200 of these contract documents.

The Town agrees to pay the Contractor for the performance of the Contract, subject to additions and deductions; and to make Payments on account thereof as provided in the Specifications of the contract.

WITNESS WHEREOF: the parties to these presents have executed this Contract in the year and day first above mentioned.

BY:

Steve Bartha, Town Manger
for the Town of Lexington

CONTRACTOR:

BY: _____

As required by Chapter 693 of the Acts of 1964, this is to certify that the Town has an appropriation which is adequate to cover the cost of the contract.

Date Signed

Town Accountant

The Certificate shall be signed by the Auditor or Accountant or other Officer of the Town of Lexington, Massachusetts having similar duties and the Official Title noted below the Signature.

Note: If the Bidder to whom the Contract is awarded is a Corporation, a Certificate of Vote giving the officer the right to sign the Contract must accompany the executed Contract. The form on page 0600-3 can be used for this purpose.

CERTIFICATE OF VOTE **(Corporations Only)**

At a duly authorized meeting of the Board of Director of the _____

Name of Corporation

Held by _____ It was VOTED, That

Date

Name Officer _____

of this company, be and hereby is authorized to execute contracts and bonds in the name and on behalf of said company, and affix its corporate seal hereto; and such execution of any contract or obligation in this company's name on its behalf by such officer under seal of the company, shall be valid and binding upon this company.

I hereby certify that I am the clerk of the above-named corporation and that

is the duly elected officer as above of said company, and that the above vote
has not been amended or rescinded and remains in full force and effect as the date of this contract

Date Clerk _____

Corporate Seal

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that _____
having a usual place of business in _____
As PRINCIPAL, and _____
a corporation duly organized and existing under the laws of _____
and authorized to do business in the Commonwealth of Massachusetts as SURETY, are hereby held and
firmly bound unto the Town of Lexington, Massachusetts in the sum of _____
(\$_____) to be paid the said Town of Lexington, Massachusetts for which payment, well
and truly to be made, we hereby bind ourselves, jointly and severally, firmly by these presents.

WHEREAS, The said principal has made a contract with the said Town of Lexington, Massachusetts bearing date _____ day of _____, 20_____, in accordance with drawings and specifications prepared therefor, which contract is hereto annexed, the terms of which are herein referred to and hereby made a part of these presents; and

WHEREAS, The said surety has examined the said contract, its agreements, terms, covenants and conditions, and the plans referred to herein, and assents thereto.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, That if the above bounden, its heirs, executors, administrators, successors and assigns, shall in all things stand to and abide by, and well and truly keep and perform, the covenants, conditions, and agreements in the said contract and any alterations thereof made as therein provided, on its or their part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify its officers and agents, as therein stipulated.

Then this obligation shall become and be null and void; otherwise it shall be and remain in full force and virtue.

AND the said surety for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work performed thereunder or the specifications accompanying the same shall in anywise affect its obligations on this bond and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

IN WITNESS WHEREOF, The principal has caused these presents to be signed in its name and behalf
and its corporate seal to be here to affixed by _____
its _____, and _____
its _____, thereto duly authorized, and the said surety has caused these
presents to be signed in its name and behalf and its corporate seal to be hereto affixed by ...

its _____, and _____
its _____, thereto duly authorized at
_____, on this _____ day of _____
two thousand and _____.

PRINCIPAL

SURETY

_____ (Seal)

_____ (Seal)

_____ (Seal)

_____ (Seal)

Signed and sealed in the presence of

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, That _____
having a usual place of business in _____
As PRINCIPAL, and _____
a corporation duly organized and existing under the laws of _____ and authorized to do
business in the Commonwealth of Massachusetts as SURETY, are hereby held and firmly bound unto the Town of
Lexington, Massachusetts in the sum of _____ (\$_____) to be paid the said
Town of Lexington, Massachusetts for which payment, well and truly to be made, we hereby bind ourselves, our
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, The said principal has made a contract with the said Town of Lexington, Massachusetts bearing date
_____ day of _____, 20_____, for the completion of
_____ in accordance with drawings and specifications prepared therefor, which
contract is hereto annexed, the terms of which are herein referred to and hereby made a part of these presents; and

WHEREAS, The said surety has examined the said contract, its agreements, terms, covenants and conditions, and the
plans referred to herein, and assents thereto.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden, its heirs, executors,
administrators, successors and assigns, shall pay for all labor performed or furnished, for all materials used or
employed in the work and for the rental of appliances and equipment employed in the carrying out of said contract,
and shall indemnify and save harmless the said Town of Lexington, Massachusetts its officers and agents as therein
stipulated.

Then this obligation shall become and be null and void; otherwise it shall be and remain in full force and virtue.

AND the said surety for value received, hereby stipulates and agrees that no change, extension of time, alteration or
addition to the terms of the contract or to the work performed here-under or the specifications accompanying the
same shall in anyway affect its obligations on this bond and it does hereby waive notice of any such change,
extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

This bond is made for the use and benefit of all persons, firms, and corporations who may furnish any material or
perform any labor for or on account of said contract, or rent or hire out any appliances and equipment used or
employed in the execution of said contract, and they and each of them are hereby made obligees hereunder the same
as if their own proper respective names were written herein as such, and they and/or each of them may proceed or
sue hereon.

IN WITNESS WHEREOF, The principal has caused these presents to be signed in its name and behalf and its
corporate seal to be here to affixed by _____
its _____, and _____
its _____, thereto duly authorized, and the said surety has caused these presents
to be signed in its name and behalf and its corporate seal to be hereto affixed by ...

its _____, and _____
its _____, thereto duly authorized at
_____, on this _____ day of _____
two thousand and _____.

PRINCIPAL

_____ (Seal)
_____ (Seal)

SURETY

_____ (Seal)
_____ (Seal)

Signed and sealed in the presence of

CERTIFICATE OF GOOD FAITH

The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this paragraph, the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

Signature: _____

Date: _____

CERTIFICATE OF OSHA TRAINING OF PERSONNEL

The undersigned certifies that all persons they employ at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration (OSHA) that is at least ten (10) hours in duration at the time the employee begins work and shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

Signature: _____

Date: _____

SPECIAL PROVISIONS

DIVISION I GENERAL REQUIREMENTS AND COVENANTS

SECTION 2.00 PROPOSAL REQUIREMENTS AND CONDITIONS

Delete all references to www.bidx.com and www.commbuys.com throughout this section.

SUBSECTION 2.02 INTERPRETATION OF BASIC ESTIMATE OF QUANTITIES *Add the following at the end of this subsection:*

Certain items in the Bid cover classes of work of uncertain necessity or work for which it is impractical to estimate approximate quantities. Such items have been marked "indeterminate".

SUBSECTION 2.03 EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS AND SITE OF WORK

Add the following at the end of this subsection:

The plans for this contract, when applicable, have been prepared in part from field survey, utility company plans and other available sources. The accuracy and/or precision of this information are not guaranteed to be correct. Accordingly, it is the responsibility of the Contractor to verify all measurements and features of the project area by his own investigation and research.

SUBSECTION 2.04 PREPARATION OF BIDS

This section shall follow that provided in the 1988 Standard Specifications for Highways and Bridges.

SUBSECTION 2.05 DELIVERY OF BIDS

Replace this subsection with the following:

The Bidder shall submit to the location specified in the "Notice to Bidders" prior to the time set for opening of the bid his Bid properly sealed, delivered or mailed in accordance with the instructions printed thereon.

SUBSECTION 2.06 BID GUARANTY REQUIRED

Replace the last two paragraphs of this subsection with the following:

Each bid must be accompanied by a bid deposit in the form of cash, certified check, treasurer's or cashier's check, or a bid bond issued by a responsible bank or trust company and payable to the order of the Town of Lexington, MA. The check or Bid Bond shall be in the amount of five (5%) percent of the Bid and shall be enclosed in a sealed envelope separate from the envelope containing the Bid.

SUBSECTION 2.07 WITHDRAWAL OF BIDS

Replace this subsection with the following:

Except as hereinafter in this subsection otherwise provided, once a Bid is submitted and received by the Owner for consideration and comparison with other bids similarly submitted, the Bidder agrees that he may not and will not withdraw it within 30 consecutive calendar days after the actual date of the opening of bids.

Upon proper written request and identification, Bids may be withdrawn as follows:

1. At any time prior to the designated time for the opening of bids.
2. Death or serious injury of a principal.
3. With the approval of the Town.
4. At any time after the expiration of the period during which withdrawal is prohibited provided the bid has not been accepted by the Town.

Unless a Bid is withdrawn as provided above, the Bidder agrees that it shall be deemed open for acceptance until the Contract has been executed by both parties thereto or until the Owner notifies a Bidder in writing that his Bid is rejected or that the Owner does not intend to accept it, or returns his Bid deposit. Notice of acceptance of a Bid shall not constitute rejection of any other Bid.

SUBSECTION 2.08 PUBLIC OPENING OF PROPOSALS

This section shall follow that provided in the 1988 Standard Specifications for Highways and Bridges.

SUBSECTION 2.09 REJECTION OF BIDS

Replace the first paragraph of this subsection with the following:

The Owner may reject Bids which fail to meet the requirements of Subsection 2.04, 2.05 and 2.06 or which are incomplete, conditional or obscure, or which contain additions not called for, erasures, alterations or irregularities of any kind, or in which errors occur, or which contain abnormally high or abnormally low prices for any class or item of work.

SECTION 3.00

AWARD AND EXECUTION OF THE CONTRACT

SUBSECTION 3.03 RETENTION OF PROPOSAL GUARANTY

Replace this subsection with the following:

Each bid check or bid bond amount may be retained by the Owner as security for the fulfillment of the Bidder's agreements as specified in subsection 2.06 and as set forth in the Bid. Should the Bidder fail to fulfill such agreements, his bid check shall become the property of the Owner or if a bid bond was furnished, the bid bond shall become payable to the Owner as liquidated damages; otherwise, the bid check shall be returned to the bidder as hereinafter provided, or if the security is a bid bond, the bid bond shall be declared null and void.

Bid checks will be returned to all except the three lowest bidders within five days, Sundays and legal holidays excluded, after the opening of Bids and to the three lowest bidders within five days, Sundays and legal holidays excluded, after the owner and accepted Bidder have executed the Contract agreement. In the event that the Contract agreement has not been executed by both the Owner and the accepted Bidder within 30 consecutive days after the opening of Bids, the bid check will be returned promptly upon demand of any Bidder who has not been notified of the acceptance his Bid.

Bid checks accompanying Bids which are rejected will be returned within five days, Sundays and legal holidays excluded, after rejection.

None of the three lowest Bids shall be deemed rejected, notwithstanding acceptance of any Bid, until the Contract an agreement has been executed by both the Owner and the accepted Bidder.

SUBSECTION 3.05 EXECUTION OF CONTRACT

Replace the number 14 with the words "10 working".

SECTION 4.00

SCOPE OF WORK

SUBSECTION 4.01 INTENT OF THE CONTRACT

Add the following at the end of the first paragraph:

Additionally, the Contractor is responsible for satisfying all requirements set forth in the Order of Conditions (when applicable) as well as any additional documents that are located in the appendices.

SUBSECTION 4.02 ALTERATIONS

Add the following at the end of this subsection:

Except in an emergency endangering life or property, no change shall be made unless in pursuance of a written order from the Engineer authorizing the change and no claim for additional compensation shall be valid unless the change is so ordered.

SUBSECTION 4.10 FINAL CLEANING UP

Replace this entire subsection with the following:

4.10 CLEANING UP

The Contractor shall at all times and at his own expense keep the site of the work free from rubbish and debris caused by his operations under the Contract.

Upon completion of the work and before acceptance and final payment, the Contractor shall remove and dispose of in an approved manner, at his own expense, from the right-of-way, construction site and adjoining property, all temporary structures and all surplus materials and rubbish which the Contractor may have accumulated during the prosecution of the work, and shall leave the areas in a neat and orderly condition.

No equipment or material shall be left within any of the aforementioned areas after acceptance of the Contract without the written permission of the Engineer. The Contractor shall not abandon any material at or near the site regardless of whether or not it has any value.

Add the following new subsection:

4.11 UTILITY MAINTENANCE

It shall be the Contractor's responsibility to maintain the drainage system in the areas under construction until such time the final system is put into use. Pipes and structures requiring cleaning as a result of sediment accumulation from construction operations shall be cleaned without additional compensation.

**SECTION 5.00
CONTROL OF WORK**

SUBSECTION 5.01 AUTHORITY OF THE ENGINEER

Add the following at the end of this subsection:

The Engineer shall be the owner's representative during the life of the Contract and he shall observe the Work in progress on behalf of the Owner.

The Contractor shall proceed without delay to perform the work as directed, instructed, determined or decided by the Engineer and shall comply promptly with such directions, instructions, determinations or decisions. If the Contractor has any objection thereto he may, within 10 days of having received any such direction, instruction, determination or decision, require that any such direction, instruction, determination or decision be put in writing and within 10 days after receipt of any such writing he may file a written protest with the Owner stating clearly and in detail his objections, the reasons therefor, and the nature and amount of additional compensation, if any, to which he claims he will be entitled thereby. A copy of such protest shall be filed with the Engineer at the same time it is filed with the owner. Unless the Contractor requires that any such direction, instruction, determination or decision be put in writing within 10 days of having received such direction, instruction, determination or decision and unless the Contractor files such written protest with the owner and Engineer within such 10 day period, he shall be deemed to have waived all grounds for protest of such direction, instruction, determination, or decision and all claims for additional compensation or damages occasioned thereby, and shall further be deemed to have accepted such direction, instruction, determination, or decision as being fair, reasonable, and finally determinative of his obligations and rights under the Contract.

SUBSECTION 5.05 COOPERATION BY CONTRACTOR

Add the following at the end of the second paragraph of this subsection:

They shall have full authority to execute the directions of the Engineer without delay and to supply promptly such labor, services, materials, equipment, plant, apparatus, appliances, tools, supplies and other items as may be required. Such superintendent shall not be removed from the work without the prior written consent of the Engineer.

If, in the opinion of the Engineer, the superintendent or any successor proves incompetent, the Contractor shall replace him with another person approved by the Engineer; such approval, however, shall in no way relieve or diminish the Contractor's responsibility for the work.

SUBSECTION 5.07 CONSTRUCTION (STAKES) STAKINGS

Replace this entire subsection with the following:

The Town will furnish general benchmark control for the project.

The Contractor, at their own expense, will furnish the following survey work:

Establishment of base lines or centerlines of construction for main roadways, ramp service roads, side streets and other major dry land items. Reproduction of base lines and

TOWN OF LEXINGTON, MASSACHUSETTS

centerlines, or lines offset to them when roadway cuts and fills have been completed. Levels may be taken on the points marking these lines.

Original grade stakes at 50' intervals giving finished grades as per plan.

Preliminary and final surveys of pits (if borrow is paid by pit measure) and dredging areas, semifinal cross sections on ledge, peat, loam, etc.

Control for structures, which shall consist of range lines on centerline of bearings or centerline of piers, face of abutments and wingwalls, horizontal and vertical control for beam seats, along with benchmarks close to structures for vertical control. Structures shall include but shall not be limited to bridges, culverts, dams, buildings and walls.

Control for alignment of curbing or edging on ramps and at other complicated locations.

Bound points and sideline stakes.

All necessary stakes for pipes and head walls, and establish all catch basin and manhole locations as to line and grade.

The Contractor shall employ qualified engineering personnel to insure adequate control and shall furnish and set stakes of the quality used by the Department for control staking. Rough stakes may be used to denote top and bottom of slopes, edge of pavement, gutter lines, etc.

The Contractor shall furnish and set, at their own expense, all stakes (such as batter boards, slope stakes, pins, offset stakes, etc.) required for the construction operations and he shall be solely responsible for the accuracy of the line and grade of all features of his/her work.

The Contractor shall be held responsible for the preservation of all stakes and marks. If any of such stakes or marks are disturbed or destroyed the cost of replacing them shall be at the contractor's expense.

SUBSECTION 5.09 INSPECTION OF THE WORK

Add the following at the end of the first paragraph of this subsection:

The Contractor shall at all times provide safe and proper facilities therefor.

**SECTION 6.00
CONTROL OF MATERIALS**

SUBSECTION 6.03 DELIVERY AND STORAGE OF MATERIALS

Add the following at the end of this subsection:

THE DEPARTMENT WILL NOT ACCEPT ANY MATERIALS DELIVERED TO
ANY PROJECT IN MOTOR VEHICLES OR SEMI-TRAILER UNITS THAT EXCEED
THE LEGAL MAXIMUM GROSS WEIGHT ALLOWED FOR THE PARTICULAR

CLASS, AS SPECIFIED IN SECTION 19A OF CHAPTER 90 OF THE GENERAL
LAWS OF MASSACHUSETTS.

SECTION 7.00

LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

SUBSECTION 7.01 LAWS TO BE OBSERVED, PART A. GENERAL

Add the following at the end of this subsection:

The Contractor shall protect, indemnify and save harmless the Owner, its officers, agents, servants and employees, from and against any and all claims, demands, suits, proceedings, liabilities, judgements, penalties, losses, damages, costs and expenses, including attorney's fees, arising from or based upon any violation or claimed violation of any such law, ordinance, rule, regulation, order, decree or other requirement, whether committed by the Contractor or any of their agents, servants, employees or Subcontractors.

Each and every provision of law and clause required by law to be inserted in the Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though they were included herein. If through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall be forthwith be physically amended to make such insertion.

SUBSECTION 7.05 INSURANCE REQUIREMENTS

Add the following at the end of this subsection:

The limits of the several kinds of liability insurance required for this Contract, in addition to insurance for Workmen's Compensation are as listed as follows:

The following types of insurance shall be provided by the Contractor:

Comprehensive General and Public Liability Insurance in an amount not less than \$1,000,000 per occurrence and in an amount not less than \$3,000,000 aggregate.

Bodily Injury Insurance covering the operation of all motor vehicles owned by the Contractor, in the amounts of \$1,000,000 for any one person, \$3,000,000 for any one accident.

Property Damage Insurance covering the operation of all motor vehicles owned by the Contractor, in the amounts of \$1,000,000 for any one accident, \$3,000,000 aggregate.

Insurance to cover bodily injury and property damage resulting from the use of motor vehicles not owned by the Contractor, while such vehicles are being operated in conjunction with the prosecution of the Work under this contract, in the amount required under b) and c) above.

Worker's Compensation and Employer's Liability as required by the General Laws of the Commonwealth of Massachusetts.

All policies shall be so written that the certificate holder, namely the Town of Lexington, 1625 Massachusetts Avenue, Lexington, MA 02420 is insured at no cost to the Town for the full amounts stated above.

The Contractor shall name the Town of Lexington as an additional insured.

SUBSECTION 7.09 PUBLIC SAFETY AND CONVENIENCE

Add the following at the end of this subsection:

During construction, the Contractor shall maintain at least one 12-foot travel lane during the day and shall open the road up to two-way traffic at night. It is the Contractor's responsibility to obtain approval for any lane closings, delays or detours at least 24 hours in advance by the Town of Lexington Engineering Division. Additionally sidewalks must be left open at all times or proper accessible pedestrian detour put in place prior to closure.

The Contractor shall remove at their own expense any and all equipment from roadways as directed by the Engineer and/or the Safety Officer at the conclusion of the working day.

The Contractor shall maintain access to all drives at all times. If access to any drives cannot be maintained, the Contractor shall notify the Engineer and persons affected, in writing, at least one week in advance of the planned discontinuance. In any case, the access shall not be discontinued for more than two consecutive days without obtaining the written authorization of the Engineer.

All construction shall be completed to Intermediate (binder) course in all phase prior to applying any surface course. Surface course shall be applied continuously in an effort to minimize jointing. Where joints are required, the relevant provisions of Section 460 shall be employed.

Construction shall be carried out in the sequence as directed by the Engineer.

The surface course shall be applied after all other construction is complete.

SUBSECTION 7.11 TRAFFIC OFFICERS AND RAILROAD FLAGGING SERVICE

Replace the first three paragraphs of this subsection with the following:

Traffic Police Details and Fire Details shall be provided for as stipulated in Section 850 of the Special Provisions for the Contract.**SUBSECTION 7.13 PROTECTION AND RESTORATION OF PROPERTY**

Add the following at the end of this subsection:

A. Protection of Utilities and Property

The Contractor shall be responsible for locating, maintaining and protecting all existing utilities. Pipes or other structures damaged by the Contractor may be repaired by the Town, Department, or utility company that suffers the loss. The cost of such repairs shall be at the expense of the Contractor. Should any damage to a utility caused by the

Contractor result in an emergency, the Contractor shall promptly warn the Owner and, if requested, furnish laborers to work temporarily under the Owner's direction in gaining access to the utility.

If live service connections are to be interrupted by excavation of any kind, the Contractor shall not break the service until new or temporary services are provided. Abandoned services shall be plugged off or otherwise made secure.

The Contract Plans indicate the location of existing known utilities in the vicinity of the work. Bidders are cautioned to verify this information, as its accuracy and completeness are not guaranteed in any manner.

B. Notice to Owners of Utilities

Written notice shall be given by the Contractor to all public service corporations or officials owning or having charge of publicly or privately-owned utilities of his/her intention to commence operations affecting such utilities at least one week in advance of the commencement of such operations, and the Contractor shall at that time file a copy of such notice with the Engineer.

Before the Contractor begins any work or operations that might damage any subsurface structures, he shall carefully locate all such structures and conduct his/her operations so as to avoid any damage to them.

The Contractor shall hand deliver notices to abutting properties at least 24 hours before the start of construction. The notice will indicate the timing of the construction and any access restrictions or other inconveniences that may result.

The Contractor shall notify and coordinate with Waste Management, the Town's waste disposal contractor when construction activities will correspond with waste pickup. A pickup schedule is included in the Scope of Work.

The Contractor shall notify and coordinate with school bus and transit companies when construction operations will affect routes.

Function	Company	Contact	Number
Waste Disposal	Capital Waste	Andre Percel	781-799-0760
School Bus	C&W Transportation		781-862-4747
LEXPRESS	Town of Lexington	Susan Barrett	781-861-1210
Liberty Ride	Lexington Visitors Center	Ariel Chin	781-862-1450

COORDINATION OF UTILITIES

The following is contact information of the principal utilities affected, but completeness of this list is not guaranteed. It will be the contractor responsibility to verify this contact information and to notify the Town of changes to this list.

Telecommunications:

RCN Cable

Kenneth Bates, Engineer 4

Margot Jones, Engineering Manager

Alex Ortiz, Construction Manager

RCN Corporation

956 Mass. Ave.

Arlington, MA 02476

O: 781-316-8885

C: 617-293-0201

F: 781-316-8887

margot.jones@rcn.net

alex.ortiz@rcn.net)

Ken.bates@rcn.net

AT&T

Hayleigh Walker-Kurland, Project Coordinator

Siena Engineering Group, Inc

50 Mall Road, Suite 203

Burlington, MA 01803

781-221-8400 x7023

Hayleigh.Walker@sienaengineeringgroup.com

Gas:

National Grid

Kenneth Moise, Project Engineer

40 Sylvan Rd

Waltham MA 02451

617-992-6607

kenneth.moise@nationalgrid.com

Comcast Cable

Wendy Brown, Cost Recovery Analyst

Comcast Cable Corporation

676 Island Pond Road

Manchester, NH. 03109

603-541-1082

Wendy_Brown@comcast.com

Tennessee Gas Pipeline

David Wood

8 Anngina Drive

Enfield, CT 06082

O: 860-763-6005

C: 413-530-7117

David_wood@kindermorgan.com

Verizon

Verizon Engineering Center

Mike Barros

385 Myles Standish Blvd

Taunton, MA 02780

866-686-1195

ma-ri.osp.center@verizon.com

Electricity:

Eversource

Kelly-Ann Correia, Supervisor, Rights, Permits and Public Works

200 Calvary St

Waltham, MA 02453

508-305-7163

kelly-ann.correia@eversource.com

Level 3 Communications

Pat Provost, Business Analyst, OSP

Relocations

Level 3 Communications

1025 El Dorado Blvd

Broomfield, CO 80021

720-888-0916

relo@centurylink.com

Water and Sewer:

Town of Lexington Water/Sewer Department

Dave Pavlik, W/S Superintendent

201 Bedford Street

Lexington, MA 02421

781-274-8300

rpecora@lexingtonma.gov

MWRA-Sewer

Kevin McKenna

2 Griffin Way

Chelsea, Ma. 02150

617-305-5956

Kevin.mckenna@mwra.com

MWRA -Water

Ralph Francesconi MWRA-Water

2 Griffin Way

Chelsea, Ma. 02150

617-305-5827

Ralph.Francesconi@mwra.com

C. Protection of Underground Facilities

The Contractor's attention is directed to the necessity of making his/her own investigation in order to assure that no damage to existing structures, drainage lines, etc., will occur.

The Contractor shall notify 'Mass DIG SAFE' and procure a DIG SAFE number for each location prior to disturbing existing ground in any way. The contractor shall notify **Lexington DPW at 781.274.8300** in addition to **DigSAFE** as Lexington is currently not a member.

DIG SAFE Call Center (888) 344-7233

The Contractor shall be responsible for informing utility owners in the event of any disruption of service or damage of any utility, marked or not. THE CONTRACTOR SHALL HAVE A MEANS OF TELEPHONE COMMUNICATION AND CONTACT NUMBERS ON SITE AT ALL TIMES.

D. Property Bounds

Should any damage to a bound result from the actions of the Contractor, the bound shall be replaced and/or realigned by the Contractor as directed by the Engineer. No further compensation will be due the Contractor for the materials and labor required to re-establish the bound in its proper position as shown on the plans.

SUBSECTION 7.18 CONTRACTOR'S RESPONSIBILITY FOR THE WORK

Replace the second paragraph of this subsection with the following:

The Contractor shall take all precautions necessary to prevent damage to the work by storms or by water entering the site of the work directly or through the ground. In case of damage by storm or water, the Contractor shall at his own cost and expense make such repairs or replacements or rebuild such parts of the work as the Engineer may require in order that the finished work may be completed as required by the Contract.

The Contractor shall bear all losses resulting to him on account of the amount or the character of the work or because the nature of the land in or on which the work is done is different from what was estimated or expected, or other causes (except as stated in Subsection 4.04, Changed Conditions

The Contractor is responsible for obtaining their own staging area needed for equipment and materials used to complete work under this contract.

SUBSECTION 7.19 PERSONAL LIABILITY OF PUBLIC OFFICIALS

Replace all references to “the Commonwealth” with “the Town”.

**SECTION 8.00
PROSECUTION AND PROGRESS**

SUBSECTION 8.03 PROSECUTION OF WORK

Add the following at the end of the first paragraph of this subsection:

The Engineer will schedule and administer progress meetings and specially called meetings throughout the duration of the Work at minimum monthly intervals. The time and location of such meetings shall be designated by the Engineer and shall be convenient for all parties involved. The Engineer will prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies to participants, and those affected by decisions made.

Additionally, the work under this contract shall progress by area, whereas, the contractor may not progress to work on the next area until substantial work on the previous area has been completed as determined by the engineer.

‘Substantial Completion’ as stated here shall be defined as the top course applied, berm installed, driveway aprons complete, loam and seed in place, and excess material and material storage piles removed. Once completed the contractor shall submit and updated schedule and receive approval from the engineer before progressing to the next area. The Engineer will consider requests for work in more than one area at a time under special circumstances, however, it shall be the sole discretion of the engineer in the allowance of this activity. For the purposes of this contract the areas are labeled on the attached map. There is not a requirement that they be performed in the order labeled.

A traffic control must be submitted a minimum of 10 days in advance of work in any given area.

‘Areas’ are those defined on the map attached to the appendix.

SUBSECTION 8.05 CLAIM FOR DELAY OR SUSPENSION OF THE WORK

Replace all references to “the Commission” with “the Town”.

Add the following at the end of this subsection:

If in the event the Contractor shall make a claim for delay or suspension of the work, the Contractor shall continue prosecution of the work during the period pending resolution of the claim or delay.

SUBSECTION 8.09 DELAY AND SUSPENSION OF THE WORK

Replace all references to “the Commonwealth” with “the Town”.

**SUBSECTION 8.10 DETERMINATION & EXTENSION OF CONTRACT TIME
FOR COMPLETION**

Add the following at the end of this subsection:

The Contractor shall suspend all work in streets between November 15 and April 15, unless otherwise permitted by the Engineer. Weather permitting and with the Engineer’s approval, the Contractor will be allowed to continue working in easement areas during

the winter. The time for completion established for the contract has already taken into account the potential for shutting down operations for the winter.

Add the following new subsection:

SUBSECTION 8.14 NIGHT, SATURDAY, SUNDAY AND HOLIDAY WORK

Work on this project is restricted to a normal eight-hour day (7:00 AM to 3:00 PM), five-day week, with the Prime Contractor and all Subcontractors working on the same shift. No work shall be done at night, on Saturdays, Sundays or Town observed Holidays or the day before or after a long weekend, which involves a holiday, except (1) usual protective work, such as pumping and the tending of fires, (2) work done in case of emergency threatening injury to persons or property, or (3) if all of the conditions set forth in the following paragraph below are met:

No work other than that included in (1) and (2) above shall be done at night except when (a) in the sole judgement of the Engineer, the work will be of advantage to the Owner and can be performed satisfactorily at night, (b) the work will be done by a crew organized for regular and continuous night work, and (c) the Engineer has given written permission for such night work.

**SECTION 9.00
MEASUREMENT AND PAYMENT**

SUBSECTION 9.04 PARTIAL PAYMENTS

Replace all references to “biweekly” with “monthly”.

Replace the second paragraph of this subsection with the following:

There will be a retainage of ten (10%) percent for all planting items. For all other items of work there will be a retainage of five (5%) percent of the value of said items.

SUBSECTION 9.05 FINAL ACCEPTANCE AND FINAL PAYMENT

Replace this entire subsection with the following:

Fixing of the date of completion and acceptance of the work or a specified part thereof shall only be effective when accomplished by a writing specifically so stating and signed by the Owner.

Partial Acceptance and Payment

At any time, the Owner may issue a written order to the Contractor declaring that he intends to utilize a specified portion of the work which in his opinion has been sufficiently completed in accordance with the Contract. A tentative list of items remaining to be completed or corrected shall be included with this order.

Within 45 days after acceptance under this subsection, the Engineer shall make an estimate in writing of the amount and value of the part of the work so accepted. The Owner shall pay said amount to the Contractor after deducting therefrom all previous payments, all charges against the Contractor as provided for hereunder, and all amounts

to be retained under the provisions of the Contract, said payment to be made at the time of the next monthly progress estimate.

Acceptance by the Owner under this subsection shall not relieve the Contractor of any obligations under the Contract except to the extent agreed upon in writing between the Owner and the Contractor. The Owner shall have the right to exclude the Contractor from any part of the work which has been accepted, but the Owner shall allow the Contractor reasonable access thereto to complete or correct items on the tentative list.

Final Acceptance and Payment

The Owner shall pay to the Contractor the entire amount found by the Engineer to be earned and due hereunder after deducting there from all previous payments and all amounts to be kept and all amounts to be retained under the provisions of the Contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment. Except as in this subsection otherwise provided, such payment shall be made no later than 15 days after but in no event before the expiration of the time within which claims for labor performed or materials or equipment furnished must be filed under the applicable lien law, or, if such time is not specified by law, the expiration of 30 days after the completion of the Engineer's final estimate.

If within six months from the date the final estimate is forwarded to the Contractor, the Contractor has not filed a valid (as by the Engineer) written reasons(s) for not accepting the final estimate, the final estimate will be considered acceptable to the Contractor and payment of the final estimate made. The acceptance by the Contractor of the final payment shall operate as and shall be a release to the Party of the First Part and every member, agent and employee thereof, from all claims by the Contractor for anything done or furnished for, or relating to the work or for any act or neglect of the Party of the First Part or of any person relating to or affecting the work, except the claim against the Party of the First Part for the remainder if any there be, of the amounts kept or retained as provided in Subsection 7.15.

SPECIAL PROVISIONS Division II: Construction Details

Item 1.

RANDOM CRACK Z SEALING – POLYMER & CRUMB RUBBER MODIFIED (PCRM) ASPHALT COMPOUND WITH REINFORCING FIBERS

1. Description

The work covered by this section of the specification consists of furnishing all plant, labor, equipment and materials necessary to perform all operations in connection with the cleaning and sealing of construction and random cracks in bituminous concrete pavements, including vegetation removal and sterilization of cracks, where necessary.

2. Material

Crack sealant shall be a modified asphalt-fiber compound designed specifically for improving the strength and performance of the parent asphalt sealant.

- a) **The asphalt binder** shall consist of a blend of neat asphalt binder, chemically modified crumb rubber (CMCR), and a polymer package, all of which meet the following

specifications:

- The binder will meet PG 64-28E requirements after modification including:
 - PG grade requirements of AASHTO M320
 - Requirements of AASHTO TP70/MP19
- Modification, at a minimum, shall consist of 7% crumb rubber, and the maximum particle size for the recycled tire rubber shall be 80 mesh (#80 sieve)
- The asphalt supplier shall provide testing for both the neat and modified asphalt binders
- See below for typical modified test results for 64-28E with crumb rubber:

DSR ORIGINAL

- kPa >1.00 @ 64° C. Fail temp = 76+° C

DSR RTFO

- kPa >2.20 @ 64° C. Fail temp = 76+° C

MSCR

- JNR (MSCR unit of measure): 3.2 E <0.5% @ 64° C
- R3200 (Average % Recovery): >70%

DSR PAV

- kPa <6000 @ 64° C

BBR

- Stiffness <300 @ -18° C. M-Value >0.300 @ -18° C

b) **The fiber reinforcing materials** shall be short-length polyester fibers having the following properties:

Length*	0.25 in. ± 0.02 in.
Elongation at Break (ASTM D2256-90)	35% ± 3%
Melting Point (ASTM D3418-82)	>475°F (246°C)
Crimps/Inch (ASTM D3937-90)	None
Cross Section	Round
Denier (ASTM D1577-90)	4.5 Nominal dpf
Tensile Strength (ASTM D2256-90)	>70,000 psi
Diameter	0.0008 in. **
Specific Gravity (ASTM D792-91)	1.32 to 1.40

* At temperatures ranging from ambient to maximum finished product mix temperature
 ** Subject to Normal Variations

c) **Modifying Compound:** The modified asphalt-fiber compound shall be mixed at a rate of 8% fiber weight to weight of asphalt cement. This compound having the same chemical base provides compatibility and exhibits excellent bond strengths. The fiber functions to re-distribute high stress and strain concentrations that are imposed on the sealant by thermal sources, traffic loading, etc.

3. Equipment

Equipment used in the performance of the work required by this section of the specification

shall be subject to approval by the Owner, and maintained in a satisfactory working condition at all times.

- a) **Air Compressor:** Air compressors shall be capable of furnishing not less than 100 cubic feet of air per minute at not less than 90 lbs. per square inch pressure at the nozzle. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water.
- b) **Broom or Sweeper:** Manually operated, gas powered air-broom or self-propelled sweeper designed especially for use in cleaning highway and airfield pavements shall be used to remove debris, dirt and dust from the cracks.
- c) **Melter:** The unit used to melt or maintain the crack sealant compound at the recommended application temperature shall be the indirect fired type. It shall be equipped with a remote heat exchanger and hot oil circulation pump capable of maintaining a consistent temperature of the heat transfer oil. The heat transfer oil shall be circulated to all sides and the bottom of the vat containing the crack sealant compound making a continuous loop back to the heat exchanger and having a flash point of not less than 600°F. The melter shall be equipped with a satisfactory means of agitating the crack sealant at all times. This may be accomplished by continuous stirring with mechanically operated paddles and/or by a circulating gear pump attached to the melter. The melter must be equipped with a thermostatic control calibrated between 200°F and 550°F, and must be capable of pumping an 8% fiber content blend.

4.Preparation of Cracks

- a) **Debris and Vegetation Removal:** All cracks shall be blown clean and sterilized by use of a propane air torch generating 2,000°F and 3,000 feet/second velocity to eliminate all vegetation, dirt, moisture and seeds. All debris removed from the cracks shall be removed
- b) **General:** No crack sealant material shall be applied in wet cracks or where frost, snow or ice is present; or when the ambient temperature is below 50°F.

5.Preparation and Placement of Sealant

- a) The asphalt-fiber compound shall be thoroughly mixed for a minimum of one hour before application can begin. To ensure a uniform fiber distribution in the sealant, and also to limit fluctuations in the application temperature of the blended material, the Contractor must have a full melter kettle of sealant mixed, heated to the proper application temperature, and ready for testing at the start of each work day. Once that batch of sealant is emptied from the melter kettle, crack sealing operations will cease for the remainder of the day. No new materials will be allowed to be added to the melter kettle during the work day under any circumstances. Minimum application temperature shall be 320°F.
- b) Sealant shall be delivered to the pavement cracks through a high pressure hose line and applicator shoe. Diameter of the applicator shoe is not to exceed 3.5" inches.

Once the pavement cracks are sealed, the width of the sealant on the pavement (overbanding) shall be no greater than 3 inches. When traffic requires immediate use of the roadway, a boiler slag aggregate shall be broadcast over the cracks to prevent the sealant from being picked up at no additional cost to the Owner.

6. Workmanship

All workmanship shall be of the highest quality, and any excess of spilled sealant shall be removed from the pavement by approved methods and discarded. Any workmanship determined to be below the high standards of the particular craft involved will not be accepted, and will be corrected and/or replaced as required by the Owner.

7. Performance

a) It is the intention of the Owner not to award a contract for this work under this or any other proposal if the contractor cannot furnish satisfactory evidence that he has the ability and experience to perform this class of work, and that he has sufficient capital and equipment to enable him to prosecute the work successfully and to complete it within the time named in the contract. The Owner reserves the right to reject this or any other proposal, or to award the contract as is deemed to be in the best interest of said Owner.

b) Properly formulated and mixed asphalt fiber compound overbanding shall not be greater than three inches (3") in width. Penalties will be imposed upon the Contractor for overbanding beyond three inches (3").

c) **The Contractor must submit the following upon request of the owner:**

- A list of six (6) jobs which he has successfully completed with the polymer and crumb rubber modified asphalt compound with reinforcing fibers specified herein, giving the name and address of these projects so they can be investigated prior to the award of the contract.

- The trade name of the crack sealant the contractor intends to use.
- The manufacturer of the crack sealant the contractor intends to use.

d) The Owner may require the Contractor to successfully perform a 200 foot test strip in the field prior to commencing work under the contract.

e) Manufacturer's certificate of material compliance will be furnished to the Owner certifying conformance to the above material specifications, including the following:

- Performance Grade of Unmodified Asphalt: PG 64-28S (standard)

- AASHTO M-320, Table 1

- 7% chemically-modified crumb rubber (CMCR)

- Composed of 100% 80-mesh recycled tire rubber

- 3-4% specially formulated polymer package

- Performance Grade of Modified Asphalt: **PG 64-28E** (able to withstand “extremely heavy” traffic loads)
- AASHTO M-320, Table 1
 - “E” Jnr 3.2 kPa @ 64°C: **<0.5%**
 - R3200 (Average % Recovery) @ 3.200 kPa: **>70%**
- 8% polyester reinforcing fibers

8. Weather Limitations

The material shall be spread only when the road surface and atmospheric temperatures are at least 50° F and rising, there is no rain in the forecast, and there is no forecast of temperatures below 32°F within 48 hours from the time of placement of the mixture, or as allowed by the Engineer. No crack sealant material shall be applied in wet cracks or where frost, snow, or ice is present.

9. Method of Award

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

10. Measurement and Payment

The quantity to be measured for payment will be the number of gallons of crack sealing actually applied, and this quantity shall be determined and verified daily. The accepted quantity of crack sealing will be paid for at the contract unit price per gallon of the type specified in the proposal, which shall be full compensation for furnishing, transporting, handling and placing the material specified and furnishing of all labor, tools, equipment and incidentals for the satisfactory completion of this item.

The quantity to be measured for payment shall be on a per day basis when gallons measured for the day are under 500 gallons. The quantity in gallons shall be determined and verified daily. If the quantity is equal to or above 500 gallons for the day, it shall be paid for under Item 1. The accepted quantity of crack sealing will be paid for at the contract unit price per day of the type specified in the proposal, which shall be full compensation for furnishing, transporting, handling and placing the material specified and furnishing of all labor, tools, equipment and incidentals for the satisfactory completion of this item

11. Payments Items

Item 1	RANDOM CRACK SEALING – POLYMER & CRUMB RUBBER MODIFIED (PCRM) ASPHALT COMPOUND WITH REINFORCING FIBERS	GALLON
Item 2	RANDOM CRACK SEALING – POLYMER & CRUMB RUBBER MODIFIED (PCRM) ASPHALT COMPOUND WITH REINFORCING FIBERS	DAY

Asphalt Pricing and Price Adjustments

- a) **Asphalt Price Adjustments:** Contractor's bid prices shall be based upon the current State DOT asphalt cement index posted exactly two (2) weeks prior to the due date for receipt of bids ("Bid Index"). If the posted State DOT asphalt cement index in place when the work is performed differs by more than 5% from the Bid Index, then contractor's invoices shall include price adjustments for the asphaltic materials (Microsurfacing, crack sealing, chip seal phase of cape seals, and tack coat), and such adjustments shall be proportionate to the mix design asphalt content (%) of each of these materials.
- b) **Future Year Price Adjustments:** The Owner reserves itself the option to extend the use, terms, conditions and prices of this bid for an additional two (2) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

Item 3. MICROSURFACING (CONVENTIONAL AND HiMA)

1. Description

Microsurfacing is a tough and durable thin overlay material which can restore the original service properties to worn but structurally sound pavements. Its properties are based on a blend of select crushed aggregate and a sophisticated chemical formulation of asphalt cement, cationic emulsifiers, additives, and polymers. This specification covers all materials, equipment, construction and application procedures for rut filling and/or surfacing of existing paved surfaces. The Microsurfacing shall be a mixture of cationic, polymer-modified asphalt emulsion, mineral aggregate, mineral and field control additives, and water, properly proportioned, mixed and spread on the paved surface in accordance with this specification and as directed by the Engineer.

Where required by the Engineer, additional Microsurfacing mixture additives shall be utilized for the purpose of improving performance and durability. These mixture additives shall include heavy polymer dosages in the emulsion (6% SBS polymer and referred to as "HiMA", or "Highly Modified Asphalt"), as determined by the Engineer, and all additives shall be homogenously blended with the other Microsurfacing components.

2. Materials

- a) **Emulsified Asphalt:** The emulsified asphalt shall be a quick-set, polymer-modified cationic type CSS-1H emulsion, and shall conform to the requirements specified in AASHTO M208 and ASTM 2397. It shall pass all applicable storage and settlement tests. The polymer shall be milled into the emulsion, or in the case of the HiMA (6% SBS) emulsion, may be blended into the unmodified base asphalt. The cement mixing test shall be waived for this emulsion.
- b)

I. Conventional Microsurfacing Residue Properties

Distillation of residue will be at a temperature of 350° F for 20 minutes. Softening Point (ASTM D36 or AASHTO T53) of the residue shall be not less than 140° F.

II. HiMA (6% SBS) Microsurfacing Residue Properties

For HiMA mixtures, emulsion testing by distillation method (ASTM D5 or AASHTO T49) shall yield a Softening Point (ASTM D36 or AASHTO T53) not less than 170° F.

c) Aggregate

I. General

The mineral aggregate used shall be of the type and grade specified for Microsurfacing. The aggregate shall be manufactured crushed stone such as granite, slag, limestone, chat, or other high quality aggregate or combination thereof.

II. Aggregate Physical Requirements

Grading- The aggregate including natural fines when tested by AASHTO methods T11 or T27 or ASTM C117 or C136, should meet the referenced gradation requirements.

Deleterious Substances- To limit the permissible amount of clay-like fines in an aggregate, a sand equivalency value of 65 or higher is required when tested by ASTM 2419 or AASHTO T176.

Soundness- The aggregate shall have a weighted loss of not more than 15% when the sodium sulfate test is used, or 20% when the magnesium sulfate test is used following AASHTO T104 or ASTM C88 test methods.

Hardness- The aggregate wear, from resistance to abrasion, shall be a maximum of 30% when using AASHTO T96 or ASTM C131 test methods.

c) Water: The water shall be potable and shall be free of harmful soluble salts.

d) Modifier: Special quick-setting emulsifier agents shall be milled into the asphalt emulsion. The emulsified asphalt shall be so formulated that when the paving mixture is applied at a thickness of one inch with the relative humidity at not more than 50% and an ambient air temperature of at least 75° F, the material will cure sufficiently so that rolling traffic can be allowed in one hour with no damage to the surface, as verified by the Engineer.

e) Additives: A mineral additive shall be introduced to the aggregate and may be any recognized brand of non-air entrained Portland cement or hydrated lime that is free of lumps, or other approved mineral additive. It may be accepted upon visual inspection. The amount of mineral additive needed shall be determined by the laboratory mix design and will be considered as part of the material gradation requirement.

A liquid field control additive may be introduced and blended with water to provide effective control of the required quick-set properties. This additive shall be made available by the chemical supplier or emulsion manufacturer, and certified to be compatible with the mixture.

3. Engineering

- a) **General:** Before work commences, the Contractor shall submit a signed and certified mix design covering the specific material(s) to be used on the project. This design shall be performed by a qualified, independent laboratory. Once the materials are approved, no substitution will be permitted unless first tested and approved by the laboratory preparing the mix design.
- b) **Mix Design:** The independent laboratory shall develop the job mix design and present certified test results for the Contractor's approval. Compatibility of the aggregate and emulsion shall be verified by the mix design. The job mix formula shall meet standard ISSA A143 Microsurfacing mix design requirements. All component material used in the mix design shall be representative of the material proposed by the Contractor for use on the project.
- d) **Specifications:** The Engineer shall approve the design mix and all Microsurfacing materials and methods prior to use. The component materials shall be within the following limits.

Residual Asphalt 5% to 9% by dry
weight of aggregate

Mineral Additive 0.5% to 3% by dry
weight of aggregate

Polymer Modifier As required to
and Field Control provide specified
Additives properties

Water As required to produce
consistency

Aggregate - Recommended Gradations:

<u>Screen Size</u>	Type II	Type III
	<u>% Passing</u>	<u>% Passing</u>
3/8"	100	100
#4	90-100	70-90
#8	65-90	45-70
#16	45-70	28-50
#30	30-50	19-34
#50	18-30	12-25
#100	10-21	7-18
#200	5-15	5-15

Suggested Application Rates:

Type II - Primary and Residential Streets and

Airport Runways:

single course = 18-20 lbs./s.y.

Cape Seal wear course = 25-28 lbs./s.y.

double course = 28-32 lbs./s.y.

rutfilling = as required

Note: all application rates above are dry aggregate weights exclusive of emulsion and all other additives.

4. Equipment

- a) General:** All equipment, tools, and machines used in the performance of this work shall be maintained in satisfactory working condition at all times to ensure a high-quality product.
- b) Mixing Equipment:** The material shall be mixed by a self-propelled Microsurfacing mixing machine which shall be a continuous flow, continuous run mixing unit able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral and field control additives, and water to a revolving multi-blade twin shafted mixer, and discharge the mixed product on a continuous flow basis. The Contractor shall own and have available two (2) continuous flow, continuous run mixing machines to ensure highest quality, and to mitigate the effect of equipment breakdowns. The machines shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral and field control additives, and water to maintain an adequate supply to the proportioning controls. The machines shall be equipped with self-loading devices which provide for the loading of materials while continuing to lay Microsurfacing, thereby minimizing construction joints.
- c) Proportioning Devices:** Individual volume or weight controls for proportioning each material to be added to the mix, i.e., aggregate, emulsified asphalt, mineral and field control additives, and water shall be provided and properly marked. These proportioning devices are usually revolution counters or similar devices, and are used in material calibration and determining the materials output at any time.
- e) Emulsion Pump:** The emulsion pump shall be a heated, positive displacement type pump.
- f) Spreading Equipment:** The surfacing mixture shall be spread uniformly by means of a mechanical type spreader box attached to the mixer, equipped with paddles to agitate and spread the materials throughout the box. The spreader box width shall be capable of adjustment while paving in order to accommodate the changing width of some roadways without excessive overlaps. A front seal shall be provided to ensure no loss of the mixture at the road contact point. The rear seal and secondary strike-off shall act as the final strike-off, and both shall be adjustable. The mixture shall be spread to fill cracks and minor surface irregularities, and leave a uniform skid resistant application of material on the surface. The spreader box and rear strike-off shall be so designed and operated that a uniform consistency is achieved to produce a free flow of material to the rear strike-off. The longitudinal joint where two passes join shall be neat in appearance, uniform and lapped. All excess material shall be removed from the jobsite prior to opening the road. The spreader box shall have suitable means provided to side-shift the box to compensate for variations in pavement width and

longitudinal alignment. A rut box shall be available to pre-fill wheel ruts when necessary prior to overlay to eliminate puddles or runoff interruption. The rut box shall be no less than 4' wide and no more than 6' wide.

- g) **Auxiliary Equipment:** Suitable surface cleaning equipment, traffic control equipment, hand tools and any support equipment shall be provided as necessary to perform the work.
- h) **Screening Plant:** All aggregate shall be rescreened immediately prior to being loaded onto Microsurfacing equipment. The screening plant shall be equipped with a 3/8" screen to remove all oversized aggregate, and shall be capable of discharging screened aggregate directly onto the support equipment. Any material discharged onto the ground must be rescreened prior to use.

5. Machine Calibration

Each mixing unit to be used in the performance of the work shall be calibrated in the presence of the Engineer prior to construction, or previous calibration documentation covering the exact materials to be used may be acceptable provided they were made during the same calendar year. The documentation shall include the individual calibration of each material at various settings, which can be related to the machine metering devices.

6. Weather Limitations

The material shall be spread only when the road surface and atmospheric temperatures are at least 45° F and rising, there is no rain in the forecast, and there is no forecast of temperatures below 32°F within 48 hours from the time of placement of the mixture, or as allowed by the Engineer.

7. Surface Preparation

- a) **General:** The area to be resurfaced shall be thoroughly cleaned of vegetation, loose aggregate and soil, particularly soil that is bound to the surface. Manholes, valve boxes and other service entrances will be protected from the surfacing material with polyethylene sheeting. All services will be uncovered upon completion of work.
- b) **Cracks in Surface:** If required by the Engineer, pre-treat the cracks in the surface with a fiberized crack sealer prior to the application of the Microsurfacing. Crack sealer shall be a polymer and crumb rubber modified asphalt cement including not less than 3% polymers, 7% recycled tire crumb rubber (80 mesh), and 8% polyester fibers (PCRM + fibers). The modified asphalt cement incorporated in the PCRM + fibers material must meet PG 64-28E MSCR testing requirements. If crack sealing pre-treatment is required by the Engineer a separate pay item will be included in the bid proposal form.
- c) **Tack Coat:** The Contractor may be required to apply a tack coat on any heavily oxidized pavements, and on high traffic roadways as directed by the Engineer. The tack coat shall consist of one part emulsified asphalt (CSS-1H) and three parts water, and be applied with a distributor at a rate of 0.05-0.10 gallons per square yard. If tack coat is required by the Engineer, a separate pay item will be included in the bid proposal form.

8. Stockpile

Precautions shall be taken to ensure that aggregate stockpiles do not become contaminated. The mineral aggregate shall be re-screened prior to being directly loaded onto Microsurfacing equipment. Owner shall provide suitable stockpile and staging area to Contractor.

9. Application

- a) General:** The surface should be pre-wetted by fogging ahead of the spreader box when required by surface and ambient conditions. The rate of application of the fog spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement surface.

The Microsurfacing mixture shall be of the desired consistency upon leaving the mixer and no additional materials should be added. A sufficient amount of material shall be carried in all parts of the spreader at all times so that a complete coverage is obtained. Overloading of the spreader shall be avoided. No lumping, balling, or unmixed aggregate shall be permitted.

No streaks, such as those caused by oversized aggregate, will be left in the finished surface. If excessive amounts of oversized aggregates appear in the mix, the job will be stopped until the Contractor proves to the Engineer that the situation has been corrected.

Extra care shall be taken on outside edges of the microsurface to prevent unnecessary buildup. Handwork shall carefully remove any excess microsurface in all areas that require touch up.

- b) Joints:** No excessive buildup, uncovered areas or unsightly appearances shall be permitted on longitudinal or transverse joints. The Contractor shall provide suitable width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on lane lines. Half passes and odd width passes will be used only in minimum amounts. If half passes are used, they shall not be the last pass of any paved areas.

- c) Mix Stability:** The Microsurfacing mixture shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess water or emulsion, and free of segregation of the emulsion and aggregate fines from the coarser aggregate.

- d) Hand Work:** Areas which cannot be reached with the mixing machine shall be surfaced using hand squeegees to provide complete and uniform coverage. The area to be hand-worked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from handwork.

The same type finish as applied by the spreader box shall be required. Handwork shall be completed immediately after the Microsurfacing mixture is discharged from the spreader box.

- e) Lines:** Care shall be taken to ensure straight lines along curbs and shoulders. No runoff on these areas will be permitted. Lines at intersections will be kept straight to provide a neat workmanship appearance. Start and stop location shall have

polyurethane sheeting across full width of road to create straight and neat finish.

- f) Rolling:** If required by the Engineer, specified areas shall be rolled by a self-propelled, 5 to 10 ton pneumatic roller with a tire pressure of 50 PSI and equipped with a water spray system. If rolling is required by the Engineer, a separate pay item will be included in the bid proposal form.

10. Quality Control

- a) Materials:** The Contractor will permit the Engineer to take samples of the aggregate and asphalt emulsion to be used in the project at the Engineer's discretion. Gradation and sand equivalency tests may be run on the aggregate, and residual asphalt content test run on the emulsion. Test results will be compared to specifications. Tests will be run by a qualified laboratory at the expense of the Owner. The Owner must notify the Contractor immediately if any test fails to meet the specifications.
- b) Microsurfacing Mixture:** Samples of the mixture should be taken daily and may be taken directly from the mixing unit(s). Consistency and residual asphalt content tests may be made on the samples and compared to the specifications. Tests will be run by a qualified laboratory at the expense of the Owner. The Owner must notify the Contractor immediately if any test fails to meet specifications.

The Engineer may use the recorder and measuring facilities of the unit to determine application rates, asphalt emulsion content, mineral and field control additives, and water.

- c) Non-Compliance:** If any two successive tests fail on the stockpile material, the job shall be stopped. It is the responsibility of the Contractor, at his own expense, to prove to the Engineer that the conditions have been corrected. If any two successive tests on the mix from the same machine fail, the use of the machine shall be suspended. It will be the responsibility of the Contractor, at his own expense, to prove to the Engineer that the problems have been corrected and that the machine is working properly.

11. Performance

It is the intention of the Owner not to award a contract for Microsurfacing work under this or any other proposal if the contractor cannot furnish satisfactory evidence that he has the ability and experience to perform this class of work, and that he has sufficient capital and equipment to enable him to prosecute the work successfully, and to complete it within the time named in the contract. The Owner also reserves the right to reject this or any other proposal, or to award the contract as is deemed to be in the best interest of said Owner.

- a) Proof of Experience:** To illustrate its experience and capabilities to perform Microsurfacing work, contractor shall provide upon request a list of similar projects completed within the last 3 years. Such list shall include the project names and locations, Owner or agency contact names and telephone numbers, and the total area of work completed for each project. The total area of work for all projects on this list shall not be less than 1 million square yards. In addition to experience with conventional Microsurfacing, the contractor must also be able to demonstrate experience applying the highly modified asphalt (HiMA 6% SBS polymer) variation of Microsurfacing, and such experience shall be noted on the above required list of similar recent projects including the contact information for each project.

12. Performance Warranty

The Contractor must furnish the following warranty after completion of the work and prior to final payment:

The Contractor hereby warrants that all workmanship and all materials furnished under this contract comply fully with requirements of these Microsurfacing Specifications. If at any time within two years after the date of the final inspection, any unfaithful or defective work should appear which, in the opinion of the Owner, is due to inferior materials or workmanship, the Contractor warrants to do whatever is necessary to remedy the defects immediately without cost to the Owner. The Owner will notify the Contractor in writing of the defects and the repairs to be made, and the Contractor will begin repairs within a mutually agreed time frame.

13. Notification

All homeowners and businesses affected by the construction shall be notified a minimum of one day in advance of the surfacing by the Contractor, by hand delivered flier.

14. Traffic Control

In addition to meeting Item 26 following Section 850 of the Supplemental Specifications to the 2022 English Standard Specifications for Highways and Bridges and the 1995 Metric Standard Specifications for Highways and Bridges, this Item shall also employ suitable methods that shall be used by the Contractor to protect the micro-surface from traffic until the new surface will support traffic without damage. All traffic control methods used shall be in accordance with the Engineer's specifications and shall be employed in a safe manner.

15. Method of Award

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

16. Measurement and Payment

The quantity to be measured for payment will be the number of square yards of Microsurfacing actually completed, and this quantity shall be determined and verified daily. The accepted quantity of Microsurfacing will be paid for at the contract unit price per square yard of the type specified in the proposal, which shall be full compensation for furnishing, transporting, handling and placing the material specified and furnishing of all labor, tools, equipment and incidentals for the satisfactory completion of this item. Rut filling will be paid by the ton, and tack coat and crack sealing (if required) will be paid for by the gallon of material applied as determined and approved daily by the Engineer.

17. Asphalt Pricing and Price Adjustments

- a) **Asphalt Price Adjustments:** Contractor's bid prices shall be based upon the current State DOT asphalt cement index posted exactly two (2) weeks prior to the due date for receipt of bids ("Bid Index"). If the posted State DOT asphalt cement index in place when the work is performed differs by more than 5% from the Bid Index, then Contractor's invoices shall include price adjustments for the asphaltic materials

(Microsurfacing, crack sealing, chip seal phase of cape seals, and tack coat), and such adjustments shall be proportionate to the mix design asphalt content (%) of each of these materials.

- b) **Future Year Price Adjustments:** The Owner reserves itself the option to extend the use, terms, conditions and prices of this bid for an additional two (2) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

Item 7 CAPE SEAL

A Cape Seal is a surface treatment in which a chip seal interlayer course is followed by a Microsurfacing wearing course. The Microsurfacing course shall be applied no sooner than 7 calendar days after the chip seal application. The Microsurfacing course shall be applied during the same construction season as the chip seal interlayer course.

Chip Seal Interlayer Course (Paragraphs 1-5)

1. Description

The Contractor shall furnish all labor, equipment, material, supplies, traffic control, and other incidentals necessary to provide the applications of liquid asphalt emulsion and aggregate coating on roadways.

2. Materials

- a) **Liquid Asphalt:** Liquid asphalt grades shall be: CRS-2 or RS-2 conforming to AASHTO specifications M208 or M140. The liquid asphalt shall be compatible with the aggregate to be utilized for the chip seal interlayer course.

- b) **Stone:** Stone shall be crushed quarry stone, free from dust, soft stone or other contaminants with a minimum of 70% of the stones having a fractured face. All stone shall satisfy a 35% maximum for the L.A. Abrasion Test and a 35% maximum for the Flakiness Index Test. Stone shall be treated prior to application with liquid asphalt material at the rate of 0.2% to 0.5% residual asphalt to ensure uniform treatment of all stones. Proper pre-treatment shall be obtained by a twin-shafted pugmill with a digital readout belt scale.

REQUIRED STONE GRADATION

9.5 mm (3/8") STONE

SIEVE SIZE	% PASSING
12.5 mm (1/2")	100
9.5 mm (0.38")	85 – 100
6.3 mm (1/4")	10 – 60
4.75 mm (#4)	0 – 25
2.36 mm (#8)	0 – 5

3. Application

The quantity of asphalt material to be used shall be in the range of 0.35 to 0.50 gallons per square yard. Cover aggregate shall be spread in the range of 20 to 30 pounds per square yard. The Contractor will use lab tests and current chip seal design standards to design specific material quantities to meet existing field conditions. The chip seal design shall be submitted to the Owner for approval prior to starting the work. Variations in material quantities will be made without adjustment to contract unit price.

4. Equipment

- a) Asphalt Distributor:** The asphalt distributor shall contain suitable mechanical circulating and heating mechanisms to provide a uniform approved temperature of the entire mass of material. The distributor shall be equipped with a radar type sensor used to measure ground speed, and feed a Digital Volumetric Accumulator capable of measuring gallons applied and distance traveled. It shall be capable of applying asphalt material in accurately measured quantities at any rate between 0.1 to 2.0 gallons per square yard of roadway surface, at any length of spray bar up to 12 feet. The distributor shall be capable of maintaining a uniform rate of distribution of asphalt material regardless of change in grade, width or direction of the road. It shall be equipped with an electronic control for setting asphalt pump discharge rate and on/off switching of spray for nozzles in one (1) foot increments which shall be located in the truck cab. The spray nozzles and pressure system shall provide a sufficient and uniform fan-shaped spray of asphalt material throughout the entire length of the spray bar at all times while operating. The spray shall completely cover the roadway surface receiving the treatment.
- b) Aggregate Spreader:** The aggregate spreader shall be hydrostatically driven and self-propelled. It may be equipped with a hydraulically controlled variable adjustable head that is capable of spreading stone in widths from 4.5' to 12' feet. The spreader shall be mounted on pneumatic tires, and shall apply the stone on the road surface in a manner that ensures that the tires do not contact the road surface until after the stone has been applied. The unit shall be equipped with an electronic radar type sensor used to measure ground speed and will automatically adjust the stone application rate depending on width of application and the speed of chip spreader. It shall have the ability to apply stone uniformly on any grade from 0 - 6%. The spreader shall be equipped with an integral hopper with a minimum capacity of 5 tons of stone which shall be filled by trucks in a manner which ensures that the truck tires never come in contact with the asphalt-treated road surfaces until the stone has been properly applied. To maintain constant stone application, a self-locking truck hitch will permit towing of aggregate trucks without stopping the chip spreader. It will be capable of maintaining positive engagement over irregular terrain.
- c) Rollers:** At least two rubber tired rollers shall be used on each treated surface immediately after the stone has been applied. Each roller shall have a compacting width of not less than 5' feet. Each roller shall have a gross weight of not less than 8 tons and contact pressure adjustable from 200 to 300 psi.
- d) Trucks:** Rear discharge conveyor-fed trucks in sufficient number and size must be used to deliver stone to the spreader.

5. Construction Methods

- a) Surface Preparation:** Surface preparation, which may include patching and adjusting of drainage and utility structures, may be completed under other items on this contract

prior to the chip seal treatment. Any other surface preparation required that is not covered under an item on this contract will be the responsibility of the Owner. Immediately prior to surface treatment, the roadways shall be swept of any loose debris by use of a mechanical sweeper. Sweeping in advance of the chip seal application may be done by the Owner or by the Contractor and paid hourly under this contract. Contractor is responsible for the disposal of swept material, unless otherwise specified in the contract. The Contractor shall protect any manhole covers, drop inlets, catch basins, curbs, and any other structures that will be affected by the surface treatment application. If protection fails, Engineer may require cleaning of structure at the Contractor's expense.

- b) Weather Limitations:** Work will not be done unless the road surface is free of standing water. No work shall be done during rain or foggy periods. No work shall be done if the ambient temperature is below 50°F. Work shall not be done due to adverse weather conditions at the discretion of the Engineer.
- c) Spreading Asphalt and Stone:** Prior to application of asphalt material on any street, sufficient quantities of materials to cover the entire street at the specified rates shall be on the site and ready for application. The Owner shall be responsible for providing the Contractor with an aggregate storage area near the job site. The asphalt material shall not be applied more than 300' feet in advance of the self-propelled aggregate spreader. At no time shall any asphalt material be on any road surface for more than fifteen seconds before it is covered with stone.
- d) Rolling:** Initial rolling shall be done immediately, within 5 minutes, following the application of treated stone. Stone aggregate shall receive a minimum of three roller passes within 30 minutes of asphalt application. Rollers shall be operated at a speed that will not displace aggregate.
- e) Final Sweeping:** Surplus aggregate shall be swept off of the road surfaces by the chip seal contractor in advance of Microsurfacing after stone seal has properly cured. In no case shall initial sweeping occur more than 10 days after the chip seal application. Care will be taken not to dislodge embedded aggregate or damage the surface. Any loose chips that have been deposited on side streets, parking lots, and sidewalks must be swept up within 10 days of chip seal application. Contractor is responsible for the disposal of swept material, unless otherwise specified in the contract.

6. Microsurfacing Course

Microsurfacing as specified in Item 3. shall be applied over the chip seal interlayer course in the same season but no sooner than 7 days after the chip seal application. After Microsurfacing has been applied the cape seal will be complete.

7. Method of Award

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

8. Measurement and Payment

The quantity to be measured for payment will be the number of square yards of Cape Seal

and Microsurfacing wearing course actually completed, and this quantity shall be determined and verified daily. The accepted quantity of Cape Seal will be paid for at the contract unit price per square yard of the type specified in the proposal, which shall be full compensation for furnishing, transporting, handling and placing the material specified, including microsurface, and furnishing of all labor, tools, equipment and incidentals for the satisfactory completion of this item.

9. Asphalt Pricing and Price Adjustments

- a) **Asphalt Price Adjustments:** Contractor's bid prices shall be based upon the current State DOT asphalt cement index posted exactly two (2) weeks prior to the due date for receipt of bids ("Bid Index"). If the posted State DOT asphalt cement index in place when the work is performed differs by more than 5% from the Bid Index, then Contractor's invoices shall include price adjustments for the asphaltic materials (Microsurfacing, crack sealing, chip seal phase of cape seals, and tack coat), and such adjustments shall be proportionate to the mix design asphalt content (%) of each of these materials.
- b) **Future Year Price Adjustments:** The Owner reserves itself the option to extend the use, terms, conditions and prices of this bid for an additional two (2) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

Item 8

POLYMER MODIFIED REJUVENATING FOG SEAL

1. Description

This work shall consist of furnishing all materials, equipment, labor and preparation necessary for the application of a light coating of asphalt emulsion containing a rejuvenating agent to an existing or newly constructed asphalt pavement for the primary purpose of slowing the oxidation, raveling and other damage caused to unprotected asphalt pavements.

2. Materials

- a) **Emulsion:** Rejuvenating asphalt emulsion, **CMS-1PF**, shall contain a polymer and conform to the following specifications. The emulsion shall be certified as meeting this specification from the manufacturer, and shall not be diluted prior to application.

Property	Test Procedure (AASHTO)	Specification (min)	Specification (max)
Emulsion Properties			
Viscosity, Saybolt-Furol, @ 77°F, SFS	T59	10	100
Storage, 24 hour, %	T59	1	
Oil Distillate, %	T59	0.5	
Sieve Test, %	T59	0.1	
Residue by Distillation ⁽¹⁾ @350°F, % Residue by Distillation, % by weight	T59	30	
Residue Properties From Distillation	T59		

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Penetration @ 4C, 200g weight, 60 sec Residue by Distillation, % by weight	T49	30
Residue Properties From Low Temp Evaporation	PP72-11, Procedure B	
Dynamic Shear, G*/sin @ 64oC, kPa	T315	Report Only
Polymer Properties		
Swelling in rejuvenating agent, % max weight increase: 48 hrs	ASTM D471 ⁽²⁾	40%
Tensile Strength (psi)	ASTM D412a ⁽³⁾	800
Glass Transition Temperature (Tg) – Midpoint by DSC (°C)	ASTM D7426 ⁽⁴⁾	0
Latex Density at 23°C (g/cm3)	ASTM D6937 ⁽⁵⁾	1.00
Latex pH	ASTM E70 ⁽⁶⁾	8.0
Test on Rejuvenating Agent		
Flash Point, COC, °F	T48	380
Viscosity, 140°F, CST	201	50
Saturate, % by wt	ASTM D2007	30
Asphaltenes	ASTM D2007	1.0
Test on Residue		
Weight Change, %		6.5
Viscosity Ratio		3

⁽¹⁾ Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350°F plus or minus 10°F. Maintain this temperature for 20 minutes. Complete the total distillation in 60 plus or minus 5 minutes.

⁽²⁾ Polymer Testing, Resistance to Swelling: Using a syringe, place 0.8 gm of latex into a 18 mm diameter DSR mold. Allow the sample to dry at ambient lab conditions (air conditioned) on the bench for 72 hours. Sample should be easily removable from the mold. Take the “button” out of the mold and place the sample into a forced air oven at 40°C (104°F) for 48 hours (on release paper). If at the end of the ambient dry, the sample sticks to the mold, place it into the oven and check it after 1-2 hours. After 48 hours, cool and weigh the sample to the nearest 0.0001 gram and record the weight. Put ½ inch of Rejuvenating Agent into a 3 oz penetration tin. Place the “button” on the Rejuvenating Agent, and add another ½ inch Of Rejuvenating Agent, so that the “button” is covered. Put the cap on the penetration tin and place it into the 40°C oven for 48 hours. Remove the “button” from the Rejuvenating Agent, blot surface of the “button” to remove excess Rejuvenating Agent, cool the “button” to room temperature and weigh it. Calculate weight gain of the “button”, express as a %.

⁽³⁾ To prepare the polymer film, dilute the waterborne polymer to 40% Total Solids Content and pour 57 g into a Teflon or silicone release mold of dimensions 7" X 7" X ¼". Allow to dry at 23°C (73 °F) and 50% RH (controlled conditions) for 7 – 10 days total time, during which time the film should be flipped around once, preferable after 3 or 4 days. The film should be transparent in the end. To drive out any residual water, place the film in an oven at 50°C for 30 min. Dried film thickness should be 25 mil +/- 5 mils. Discard films <20mil. Cut out dumbbell-shaped test specimens of dimension 75 mm total length, 25 mm mid-section (L) and 4 mm width of mid-section. Grip in Instron machine with gap size 1 inch, use 8 inch/min cross-head speed.

⁽⁴⁾ Use between 3 – 30 mg dry polymer. Instrument used is TA Q2000Differential Scanning Calorimeter (DSC). Heating rate is 20°C/min.

⁽⁵⁾ Replace “Emulsified Asphalt” with “Latex” in text of test method. The testing temperature used should be 25 +/- 3°C. The calculation in Section 7 should be as follows:

$$D = (W_f - W_t) * 0.1$$

$$S.G. = D/8.337$$

Where: W_f = Weight of filled cup (g), W_t = Weight of empty cup (g)

⁽⁶⁾ A pH meter with automatic temperature measurement should be used in the evaluation with a calomel cell assembly or combination electrode. Calibration should be made using the procedure with the pH meter, according to ASTM method, prior to testing the pH of the latex. In Section 9, the procedure for measuring pH of the latex should be as follows:

- Place the electrode and probe into the dispersion that is to be measured and swirl the sample cup or beaker gently. (You may also use the probe in a stirring motion.)
- Wait for the reading to stabilize (usually less than a minute) and read/record this value. Note the temperature if not utilizing an ATC probe.
- Take the Electrode and ATC probes from the sample and rinse thoroughly with deionized water. Pat dry and place back into appropriate solution recommended by electrode manufacturer for storage.

1. Material Certifications and Testing

The emulsion manufacturer, through the Contractor, shall submit to the Owner certified test results that the emulsion meets the specification. The polymer manufacturer and the rejuvenating agent manufacturer, through emulsion supplier and the Contractor, shall submit to the Owner certified test results on the polymer and the recycling agent that meets the required specifications. The Owner will not accept test results dated more than 90 days from the date of bid opening.

Certifications and test results on the emulsion must be submitted to the Owner and approved by the Owner 5 days prior to supplying material.

Prior to and during the project the Owner may require samples of the finished emulsion, rejuvenating agent and the polymer used in the emulsion to be submitted to the Owner designated laboratory for testing. All testing shall be at the Owner's expense.

b) **Aggregate:** The aggregate material shall be a dry, clean, dust and dirt-free, sound, durable, angular shaped manufactured specialty sand, such as that used as an abrasive (i.e., trade name "Black Beauty"), with a Mohs hardness of 6 to 8. The Contractor shall submit manufacturer's technical data and a manufacturer's certification indicating that the specialty sand meets the requirements of the specification to the Engineer prior to start of construction. The sand must be approved for use by the Engineer and shall meet the following gradation limits.

2. Aggregate Material Gradation Percentage Retained Sieves

No. 8 (2.38 mm)	0
No. 16 (1.19 mm)	0-10
No. 20 (0.84 mm)	0-25

No. 30 (0.60 mm)	15-50
No. 40 (0.42 mm)	20-45
No. 50 (0.30 mm)	5-35
No. 70 (0.21 mm)	0-5
No. 200 (0.07 mm)	0-2

3. Equipment

a) Pressure distributor: The emulsion shall be applied with a computer rate-controlled asphalt distributor. The equipment shall be in good working order and contain no contaminants or diluents in the tank. Spreader bar tips must be clean, free of burrs, and of a size to maintain an even distribution of the emulsion. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process with application speeds under eight (8) miles per hour or seven hundred (700) feet per minute. Before use the equipment must be tested under pressure for leaks to ensure it is in good working order.

The distributor truck shall be equipped with a 12 foot minimum, spreader bar with individual nozzle control. The distributor truck shall be capable of specific application rates in the range of 0.05 to 0.25 gallons per square yard. These rates shall be computer-controlled rather than mechanical. The distributor truck shall have an easily accessible thermometer that constantly monitors the temperature of the emulsion, and have an operable mechanical tank gauge that can be used to cross-check the computer accuracy.

The distributor truck shall be equipped to effectively heat and mix the material to the required temperature prior to application. Heating and mixing shall be done in accordance with the manufacturer's recommendations. Care shall be taken not to overheat or over-mix the material.

The distributor shall be equipped to hand-spray the emulsion in areas identified either on the plans or by the Engineer, or not accessible to the distributor truck itself.

b) Aggregate spreader: The asphalt distributor truck shall be equipped with an aggregate spreader mounted to the distributor truck that can apply sand to the emulsion in a single pass operation without driving through the wet emulsion. The aggregate spreader shall be equipped with a variable control system capable of uniformly distributing the sand at the specified rate at varying application widths and speeds. The sander shall have a minimum hopper capacity of at least 3,000 pounds of sand. Push-type hand sanders will be allowed for use around lights, signs and other obstructions.

4. Weather Limitations

Place the fog seal when both the pavement and atmospheric temperature is 50°F and rising.

Do not place fog seal if any of the following conditions exist:

- Impending weather conditions do not allow for proper curing, or if temperatures are forecasted below 32°F within 24 hours from the time of work.
- The existing pavement temperature is 140°F or above.
- The pavement surface is wet or rain is forecasted within 24 hours of placement.
- Work shall not be done due to adverse weather conditions at the discretion of the engineer.

5. Surface Preparation

The Contractor shall clean the pavement surface prior to placement with a power broom, blower and road sweeper. Clean any muddy or dirty areas by flushing with water. Allow surface to dry completely prior to applying asphalt emulsion. Start and stop location shall have polyurethane sheeting across full width of road to create straight and neat finish.

6. Application of Asphalt Emulsion & Aggregate

The Contractor shall follow the construction methods as described. Target application rates for the emulsion shall be in the range of 0.06 to 0.15 gallons per square yard as established by the Engineer after spraying a test strip or strips with varying application rates in order to determine the optimum rate to achieve coating without runoff or delayed curing times. Target application rate for the aggregate shall be 0.5 pounds per square yard, also as established by the Engineer after spraying the test strip(s). Apply the asphalt emulsion at the target rate(s) established during the test strip. Maintain the asphalt emulsion temperature from 120° to 160°F during construction, including the start of each day. Reheat the asphalt emulsion at a rate of no more than 25° F per hour whenever the asphalt emulsion is allowed to cool below 110°F. If the target application rates are not the optimum application rates to achieve proper coating of the existing or newly constructed pavement surface, or if the break time is too long or too short, immediately notify the Engineer. Adjust and document the new application rate by stationing. Do not allow the asphalt emulsion to streak on the road surface. If the Engineer determines that streaking is occurring, cease operations until the Engineer is satisfied that streaking has been eliminated. Apply the asphalt emulsion to all exposed areas of asphalt surface as directed by the Engineer. This may require hand spraying intersection areas in order to cover the entire asphalt surface.

During the application of the fog seal, ensure there are no deficiencies in the fog seal, resulting from poor workmanship, flushing, tracking from equipment, surface patterns, and sweeping. Inspect workmanship for untreated areas, minimum overlap on longitudinal joints, and minimum overlap on construction joints.

Verify the following for daily acceptance:

- Fog seal edges are neat and uniform along the roadway lane, shoulder and curb lines.
- Fog seal has no surface patterns such as lean or heavy lines.
- Fog seal has no bleeding/flushing areas.
- Fog seal uniformly covers all portions of the asphalt surface
- Blotter sand is broadcast uniformly and at the proper rate.

7.Method of Award

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

8.Measurement and Payment

- a) The quantity to be measured for payment will be the number of square yards of Fog Seal completed.
- b) No additional compensation shall be made for additional work required to apply asphalt emulsion to areas outside the normal operating width of the distributor.

9.Future Year Price Adjustments: The Owner reserves itself the option to extend the use, terms, conditions and prices of this bid for an additional two (2) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

Item 9 DELTA MIST® PENETRATING ASPHALT REJUVENATOR

1.Description

This work shall consist of furnishing all materials, equipment, labor and preparation necessary for the application of a light coating of Delta Mist penetrating asphalt rejuvenator to an existing or newly constructed asphalt pavement for the primary purpose of slowing the oxidation, raveling and other damage caused to unprotected asphalt pavements.

2.Materials

Delta Mist® Fog Seal, produced by Collaborative Aggregate LLC or approved equal.

Each bidder must submit a bid with a certified statement from the asphalt rejuvenator manufacturer evidencing that the asphalt rejuvenating agent conforms to the required physical and chemical properties required to achieve the Material Performance and Testing outlined in 2a 1), 2) and 3) set forth herein.

At no time is any dilution or altering of the rejuvenating agent permitted once it leaves the blending facility or manufacturer. Rejuvenating materials shall follow all manufacturer's recommended storage controls with regards to temperature (never frozen or overheated), agitation, and exposure to UV light. The manufacturer/contractor shall ensure that the products are free of defect and within the product's useable shelf-life.

- a) Material Performance and Testing:

1) The asphalt rejuvenating agent shall have the capability to penetrate the asphalt pavement surface. The asphalt rejuvenating agent shall be absorbed and incorporated into the asphalt binder. Verification that said incorporation of the asphalt rejuvenating agent into the asphalt binder has been affective shall be by analysis of the chemical properties of the asphalt binder.

2) The viscosity shall be reduced by a minimum of 25% for a pavement two years or less in age and reduced by a minimum of 40% for a pavement greater than two years in age as determined by dynamic shear rheometer (DSR) method for asphalt testing in accordance with FAA P-632 procedure. The FAA P-632 specification is the current governing standard for performance requirements of surface applied asphalt rejuvenators. This analysis shall apply to extracted asphalt binder, taken from cores extracted thirty to forty-five days following application, in the upper 3/8 inch of pavement.

Reference Tables 1 and 2 below.

Table 1. Pavement Three (3) Years or Less in Age

Item	Property of Recovered Binder ²	Requirement	Test Method
1	Absolute Viscosity 60°C , P	$\geq 25\%$ Decrease ²	ASTM D2171
2a	Complex Modulus 60°C , G*		
2b	Viscosity 60°C , $\eta = G^* / \dot{\omega}$ Pa·s		AASHTO T315
2c	Phase Angle 60°C , $\delta, {}^{\circ}$	Report	

Table 2. Pavement More than Three (3) Years in Age

Item	Property of Recovered Binder ²	Requirement	Test Method
1	Absolute Viscosity 60°C , P	$\geq 40\%$ Decrease ²	ASTM D2171
2a	Complex Modulus 60°C , G*, kPa		
2b	Viscosity 60°C , $\eta^* = G^* / \dot{\omega}$ Pa·s		AASHTO T315
2c	Phase Angle 60°C , $\delta, {}^{\circ}$	Report	

² Procedures: Sample collection for application and acceptance as noted in this specification. Sample weights and measure by ASTM D3549; Extraction by: ASTM D2172, Method A using toluene (conditioning to remove moisture will not be accomplished); Recovery by: ASTM D1856 (Abson) or ASTM D5404 (Roto-Vap); and binder extraction, recovery and testing within 48-96 hours of obtaining pavement cores or equivalent surface area samples.

3) The Engineer may require that untreated and treated core samples (a minimum of six inches in diameter) be removed by the Engineer at the owners expense. The treated core samples shall be taken in the same lane and in close proximity to each untreated core sample. A minimum of three untreated and three treated core samples shall be taken for each pavement group, or one set of six cores per every 50,000 square yards of treated pavement in each pavement group. If the Engineer requires sample cores, control cores shall be taken on the untreated portion of pavement 24-96 hours prior to applying the

penetrating asphalt spray rejuvenator. Cores taken from treated pavement shall be taken within 30-45 days following application in accordance with FAA -632 procedure.

3. Equipment

a) Pressure distributor: The asphalt rejuvenator shall be applied with a computer rate-controlled asphalt distributor. The equipment shall be in good working order and contain no contaminants or diluents in the tank. Spreader bar tips must be clean, free of burrs, and of a size to maintain an even distribution of the emulsion. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process with application speeds under eight (8) miles per hour or seven hundred (700) feet per minute. Before use the equipment must be tested under pressure for leaks to ensure it is in good working order.

The distributor truck shall be equipped with a 20 foot minimum, spreader bar with individual nozzle control. The distributor truck shall be capable of specific application rates in the range of 0.05 to 0.25 gallons per square yard. These rates shall be computer-controlled rather than mechanical. The distributor truck shall have an easily accessible thermometer that constantly monitors the temperature of the rejuvenator, and have an operable mechanical tank gauge that can be used to cross-check the computer accuracy.

The distributor truck shall be equipped to effectively heat and mix the material to the required temperature prior to application. Heating and mixing shall be done in accordance with the manufacturer's recommendations. Care shall be taken not to overheat or over-mix the material.

The distributor shall be equipped to hand-spray the rejuvenator in areas identified either on the plans or by the Engineer, or not accessible to the distributor truck itself.

b) Calibration: Furnish all equipment, materials, and labor as necessary to calibrate the computer controlled distributor. Perform the calibration with the specified material prior to applying the penetrating asphalt spray rejuvenator on the prepared surface, in accordance with applicable standards and the project specifications.

4. Weather Limitations

Place the asphalt rejuvenator when both the pavement and atmospheric temperature is 50°F and rising.

Do not place rejuvenator if any of the following conditions exist:

- Impending weather conditions do not allow for proper curing, or if temperatures are forecasted below 32°F within 24 hours from the time of work.
- The existing pavement temperature is 140°F or above.
- The pavement surface is wet or rain is forecasted within 24 hours of placement.
- If weather conditions interfere with application and/or curing, the Engineer may, at their discretion, suspend the job or require remedial action as deemed necessary..

5. Surface Preparation

The Contractor shall clean the pavement surface prior to placement with a power broom, blower and road sweeper. Clean any muddy or dirty areas by flushing with water. Allow

surface to dry completely prior to applying rejuvenator. Start and stop location shall have polyurethane sheeting across full width of road to create straight and neat finish.

Iron castings, crosswalks and other pavement markings shall be covered with polyurethane sheeting or other approved method to prevent rejuvenator material from building up and causing low friction on these surfaces. Sheetng shall only be removed once material has fully cured on asphalt surface.

6. Application of Delta Mist Penetrating Asphalt Rejuvenator

The Contractor shall follow the construction methods as described. Target application rates for the penetrating asphalt spray rejuvenator shall be in the range of 0.05 to 0.135 gallons per square yard as established by the Engineer after spraying a test strip or strips with varying application rates in order to determine the optimum rate to achieve coating without runoff or delayed curing times. Generally, the application rate for pavements 2 years old and less will be in the range 0.05 to 0.075 gallons per square yard, the application rate for pavements 3 to 5 years old will be in the range 0.08 to 0.10 gallons per square yard, and the application rate for pavements 6 years old and older will be 0.11 to 0.135 gallons per square yard.

The penetrating asphalt spray rejuvenator shall be applied at an initial rate determined by the manufacturer's recommendation and the Engineer on site. A 200' test strip will be required to ensure that the rate is at a sufficient amount for uniform coverage of the asphalt surface. Continuous monitoring of surface conditions or changes in asphalt mat characteristics requiring adjustment to the application rates to conform to conditions shall be determined by the manufacturer's representative. If the target application rates are not the optimum application rates to achieve proper coating of the existing or newly constructed pavement surface, or if the break time is too long or too short, immediately notify the Engineer. Adjust and document the new application rate by stationing.

Do not allow the asphalt rejuvenating agent to streak on the road surface. If the Engineer determines that streaking is occurring, cease operations until the Engineer is satisfied that streaking has been eliminated.

Apply the penetrating asphalt spray rejuvenator treatment to all exposed areas of asphalt surface as directed by the Engineer

7. Method of Award

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

8. Measurement and Payment

- a) The quantity to be measured for payment will be the number of square yards of penetrating asphalt spray rejuvenator completed at various application rates.
- b) No additional compensation shall be made for safety signing for construction operation and additional work required to apply penetrating asphalt spray rejuvenator treatment to areas outside the normal operating width of the distributor

9. Future Year Price Adjustments: The Owner reserves itself the option to extend the use, terms, conditions and prices of this bid for an additional two (2) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

Item 10
HOT MIX ASPHALT LEVELING COURSE

1. Description

Work under this item consists of furnishing and installing hot mix asphalt as a leveling course. The required depth of hot mix asphalt will vary by location. The Engineer will advise the Contractor with the desired depth prior to beginning work and shall make adjustments as deemed necessary.

Work under this item shall conform to the Commonwealth of Massachusetts Standard Specifications for Highways and Bridges for item 460, Hot Mix Asphalt (HMA) for local roads, as amended by this specification, or as directed by the Engineer. The leveling course shall be constructed to the depth, typical section, or elevation required by the Engineer and shall be rolled and finished.

Price adjustments for Hot Mix Asphalt will be made in conformance with document 00811 published by MassDOT. Each contractor invoice will include a line for asphalt adjustment on the previous invoice. No adjustment will be made on invoice one. Invoice two will include adjustment for invoice one etc. The Contractor will provide backup documentation and calculations for adjustments with the draft invoice. The base bid price for liquid asphalt on this contract will be as published by MassDOT for the day of the bid opening.

If directed by the Engineer, tack coat will be used at the rate of .05 to .10 GAL/SY, verified by metering on all surfaces prior to placement

Method of Award

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

2. Measurement and Payment

Hot mix asphalt shall be measured by the ton and shall be the actual and verified tonnage complete in place and approved. The quantity shall be determined only by weight slips that have been properly countersigned by the Engineer at the time of delivery. The tonnage of hot mix asphalt will be paid for at the contract unit price per ton of specified hot mix asphalt, complete in place. If tack coat is required by the Engineer, a separate pay item will be included in the bid proposal form.

3. Asphalt Pricing and Price Adjustments

- a) **Asphalt Price Adjustments:** Contractor's bid prices shall be based upon the current State DOT asphalt cement index posted exactly two (2) weeks prior to the due date for receipt of bids ("Bid Index"). If the posted State DOT asphalt cement index in place when the work is performed differs by more than 5% from the Bid Index, then Contractor's invoices shall include price adjustments for the asphaltic materials (Microsurfacing, crack sealing, chip seal phase of cape seals, and tack coat), and such adjustments shall be proportionate to the mix design asphalt content (%) of each of these materials.
- b) **Future Year Price Adjustments:** The Owner reserves itself the option to extend the use, terms, conditions and prices of this bid for an additional two (2) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

Item 11 PAVEMENT MILLING

1. Description

Work under this item shall conform to the requirements of the 2023 Mass DOT Standard Specifications and the latest Supplemental Specifications for Subsection 415 Pavement Millings or , as directed by the Engineer, and the following:

- The work shall consist of removing, by cold-planer, asphalt pavement in designated areas.
- The length and width of the excavation will be done as determined by the Engineer.
- The milled material shall become the property of the Contractor to be disposed of or recycled by him.

At milling locations, the transition between existing and proposed pavement shall be constructed to maintain the grade of the roadway prior to milling in order to produce a smooth transition without dips or bumps.

Milling for patches shall be at a 2 inch depth. If greater milling depths are required they shall be paid for per square yard per 2-inch depth section, beyond the first 2 inches.

In no case will a deduction in area be made for minor un-milled areas due to catch basin or manhole castings, gate boxes or transverse joints.

2. Method of Award

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

3. Measurement and Payment

The unit price bid per square yard for each item shall include the cost of furnishing all labor and equipment necessary to complete the milling including the removal of pavement by other means, the removal and disposal of milled material and raised or slotted pavement markers, mechanical sweeping and cleaning the resultant surface after milling.

4. Future Year Price Adjustments:

The Owner reserves itself the option to extend the use, terms, conditions and prices of this bid for an additional two (2) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

**Item 12
CATCH BASIN AND/OR MANHOLES ADJUSTED**

Description

Work under this item shall conform to the requirements of the 2023 Mass DOT Standard Specifications and the latest Supplemental Specifications for Section 220 (Adjustment, Rebuilding and Remodeling of drainage Structures).

2. Materials

Asphalt collars will be constructed at no additional cost. A minimum of four (4"), but no less than the existing thickness of hot mix asphalt shall be placed and compacted to the underlying grade of the proposed wearing surface and will be considered incidental to the above Item's unit price. All asphalt collars will be completely coated with (RS-1) Asphaltic Emulsion before placement of hot mix asphalt. The brick to be used shall meet the requirements of MassDOT Materials Specification M4.05.2 (Clay Brick).

3. Engineering

In all roadways, the castings shall be adjusted to the final grade and measured by each catch basin or manhole adjusted and approved by the Engineer. Damaged or obsolete castings shall be replaced with new castings as directed by the Engineer. Frames, grates, and covers will be furnished by the Owner. Contractor is responsible for transporting frame, grates, and covers to work site. The Contractor shall properly dispose of the old castings. No additional compensation will be made for disposal for old castings.

If in the opinion of the Engineer a drainage structure requires replacement or reconstruction, the structure or part of structure shall be rebuilt in conformance with Mass DOT specifications and paid for as such.

4. Method of Award

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

5. Measurement and Payment

Compensation for all labor, materials (including cement concrete, hot mix asphalt, and asphaltic emulsion), equipment and incidentals to construct the collars shall be included in

the contract unit price of this item. The quantity to be measured for payment will be the number of catch basins and manhole adjusted, to be paid for at the unit price per each. The Contractor shall properly dispose of the old drainage structure. No additional compensation will be made for disposal of the old structure material.

6. Asphalt Pricing and Price Adjustments

- a) **Asphalt Price Adjustments:** Contractor's bid prices shall be based upon the current State DOT asphalt cement index posted exactly two (2) weeks prior to the due date for receipt of bids ("Bid Index"). If the posted State DOT asphalt cement index in place when the work is performed differs by more than 5% from the Bid Index, then Contractor's invoices shall include price adjustments for the asphaltic materials (microsurfacing, crack sealing, chip seal phase of cape seals, and tack coat), and such adjustments shall be proportionate to the mix design asphalt content (%) of each of these materials.
- b) **Future Year Price Adjustments:** The Owner reserves itself the option to extend the use, terms, conditions and prices of this bid for an additional two (2) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

Item 13 WATER GATES ADJUSTED

1. Description

Valve boxes shall be installed vertically, centered over the operating nut, and the elevation of the top shall be adjusted to final grade. Boxes shall be continuously and adequately supported during backfilling to maintain vertical alignment. Bricks shall be placed at the base of the flange to properly support the box. Backfill around valve boxes and anywhere excavation is made in the street shall be compacted in 12 inch lifts. A minimum of four (4"), but no less than the existing thickness of hot mix asphalt shall be placed and compacted to the underlying grade of the proposed wearing surface and will be considered incidental to the above Item's unit price.

The boxes and tops shall be furnished by the Owner. Contractor is responsible for transporting frame, grates, and covers to work site. Old castings shall be disposed of by the Contractor. The Contractor shall properly dispose of the old castings. No additional compensation will be made for disposal for old castings.

2. Method of Award

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

3. Measurement and Payment

The unit price payment for this item will be for all work described above, for each water gate adjusted.

4. Future Year Price Adjustments:

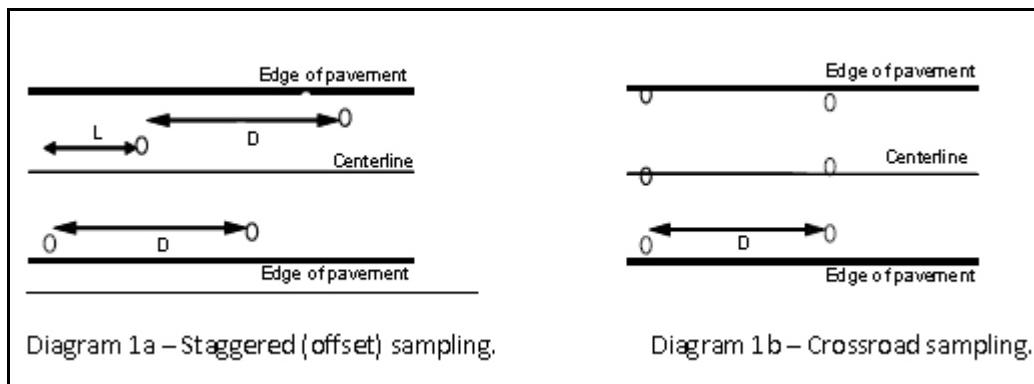
The Owner reserves itself the option to extend the use, terms, conditions and prices of this bid for an additional two (2) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

ITEM 14 CORE SAMPLING

1. DESCRIPTION

Core sampling and mix design are required to determine a road(s) viability for the Cold In-place Recycling process. It is also an optional process to assess existing road conditions.

Cores shall be obtained using a pattern that results in a representative sample of the pavement to be recycled including at or near lane lines, within and between wheel paths, at the pavement edge, and within shoulders, if shoulders are to be recycled. The roadway shall be sampled in accordance with staggered or offset sampling (as illustrated in **Diagram 1a**) or crossroad sampling with no offset (as illustrated in **Diagram 1b**).



Core samples shall be obtained to the underlying base or subgrade soil. If a core breaks off prior to penetrating the underlying materials, coring shall continue to the bottom of the pavement for thickness-measurement purposes. On retrieval, each core shall be measured to the nearest 1/8th inch, and then placed in a separate container and labeled. A coring log summarizing the date, station, offset, and core thickness shall be recorded for each core location and provided to the mix design laboratory.

D – 1 mile maximum

L – 0.5 mile maximum

- a) At least 15% of the cores shall be in the shoulder if the shoulder is getting recycled.
- b) At least 25% of the cores shall be on or within 3 feet of centerline.

Arterial and Industrial Streets

D – 2,000 feet maximum

L – 1,000 feet maximum

- a) At least 25% of the cores shall be in the shoulder, if it is getting recycled, or within 3 feet of gutter.
- b) At least 25% of the cores shall be on or within 3 feet of centerline.

Residential Streets

- a) For streets less than 250 feet long, a minimum of one core when grouped with other streets to obtain the quantity of material required for mix design.
- b) For streets 250 feet to 500 feet long, a minimum of two cores when grouped with other streets to obtain the quantity of material required for mix design (one within 3 feet of gutter, and the other within 3 feet of centerline).
- c) For streets over 500 feet long, a minimum of three cores when grouped with other streets to obtain the quantity of material required for mix design (one within 3 feet of gutter, one within 3 feet of centerline, and the third between the two).

2. FILLING SAMPLE HOLES

- a) Each sample hole shall be filled in accordance with the procedures described below.
After sampling and filling the holes, the roadway shall be cleaned of all loose debris.
- b) A high-quality cold patch material shall be used to fill core or milling holes. The cold mix shall be compacted flush with a tamping rod, sledge, or Marshall hammer.
Approximately the same amount of cold patch (350lbs) will be required to fill the holes as is required for each mix design.

3. METHOD OF AWARD

To ensure Contractor accountability, the Owner intends to award all items to a single Contractor. Accordingly, Contractors must bid on all items of work, and the low bidder will be the Contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

4. MEASUREMENT AND PAYMENT

The cost of coring labor, equipment and materials shall be paid per day for each day of coring operations conducted.

ITEM 15 MIX DESIGN

1. MIXTURE DESIGN

- 1) Obtain cored samples for the project mix design. Three hundred and fifty pounds (350 lbs.) of representative material to be recycled is required for each mix design.
- 2) An independent laboratory not owned or controlled by the Contractor shall develop and submit a Job Mix Formula (JMF) prior to the start of the CIR operation. Develop the JMF conforming to the requirements of Table 2B below.

Table 2B – CIR Minimum Mix Design Requirements for Stabilizing Agents

Test Method	Specification	Criteria
Gradation of RAP (Sieve Analysis of Aggregates)	ASTM C117 and C136	1 ½" sieve-100% passing 1" sieve-95 to 100% passing
Bulk Specific Gravity of Compacted Samples	ASTM D6752 or D2726	Report Only; Ndes=30
Maximum Theoretical Specific Gravity	ASTM D2041	Report Only
% Air Voids		Report Only
Tensile Strength (Resistance of Compacte Mixture to Moisture): Dry, psi	ASTM D4867 Part 8.11.1, 25°C, psi	Minimum 45
Wet (conditioned), psi	Conditioned ITS, ASTM D 4867, psi	Minimum 30
RAP Coating Test	AASHTO T 59	Minimum Good
Minimum Virgin Asphalt Content		1.5%
Foamed Asphalt Expansion Ratio		Minimum 8.0 Times
Foamed Asphalt Half-life		Minimum 6.0 Seconds

- 3) The lab equipment used to simulate the asphalt foaming process and RAP stabilization shall be substantially similar to the Contractor's recycling equipment to be used on the project.
- 4) The mix design JMF shall be the baseline measure for the rate of stabilizing agent application and water blended with the RAP to construct the CIR mixture. The mix design shall indicate the allowable tolerance for field adjustments for the stabilizing agent and/or water so as not to jeopardize the performance of the mix in regard to Table 2B but allow the Contractor to adjust the mix in response to field conditions in consultation with the Engineer.

- 5) Provide the mix design report with the following minimum information:
- a) Gradation of RAP
 - b) Density, maximum specific gravity, air void content, indirect dry tensile strength, indirect wet (conditioned) tensile strength, and tensile strength ratio at each recycling agent content iteration (minimum of 4, inclusive of recommended moisture and stabilizing contents) and at the recommended moisture and stabilizing agent contents
 - c) Recommended water content range as a percentage of dry RAP
 - d) Optimum stabilizing agent content as a percentage of dry RAP
 - e) Stabilizing agent designation, PG grading of asphalt binder, if applicable, supplier name and location, and certificates of compliance
 - f) Application means of recycling agent
 - g) Allowable tolerances for field adjustments for stabilizing agent and/or water
 - h) Portland cement, if needed

2. METHOD OF AWARD

To ensure Contractor accountability, the Owner intends to award all items to a single Contractor. Accordingly, Contractors must bid on all items of work, and the low bidder will be the Contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

3. METHOD OF PAYMENT

Payment for Mix Designs shall be per each mix design required.

**ITEM 16
COLD IN-PLACE RECYCLING (CIR)**

4. DESCRIPTION

This work consists of the full or partial depth milling of the existing HMA pavement to the width and depth specified on the plans, blending the processed material with a foamed asphalt stabilizing agent, water, and other additives as necessary and required by the mix design, and placement and compaction of this mixture in accordance with the plans and specifications.

5. MATERIALS**1) Reclaimed Asphalt Pavement (RAP) Material**

Mill the RAP from the existing roadway and process it in-place.

The RAP shall be free of contamination of concrete, silt, clay, or other deleterious materials.

Remove rubberized crack filler, pavement markers, loop wires, fabric, or other materials as observed from the roadway during the recycling process. Appropriately size and homogenously blend any residual materials with the RAP.

The milled and processed material shall conform to the following gradation prior to addition of the stabilizing agent:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 ½"	100
1"	95 to 100

2) Stabilizing Agent (ITEM 4)

The asphalt stabilizing agent shall be Foamed Asphalt.

3) Foamed Asphalt

- a) Provide asphalt binder performance grade for foamed asphalt of PG 64-22 or PG 64-28.
- b) Sufficiently heat asphalt binder to meet the mix design expansion and half-life criteria; not to exceed 375° F.
- c) Asphalt binder shall produce asphalt foam with a minimum expansion ratio of 8 and half-life of no less than 6 seconds.

4) Mineral Filler (ITEM 5)

If required by the mix design, the mineral filler shall be Portland Cement.

5) Water

Provide water added to the RAP for foaming asphalt. Water may be added to the RAP at the milling head and/or in a mixing chamber. Water to be provided by Owner from a nearby hydrant or other suitable source.

6. QUALITY MANAGEMENT PROGRAM

1) Personnel

Provide a qualified and certified technician for performance of field density.

2) Equipment

- a) Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The Engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the applicable AASHTO and/or ASTM specifications and maintain a calibration record at the laboratory.
- b) Furnish a nuclear gauge and ensure that the gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.
- c) Conform to ASTM D 6938 for density testing and gauge monitoring methods.

3) Quality Control (QC) Testing

- a) Roadway production lots will be defined as 4000 lane-feet. Each roadway production lot will consist of two 2000 lane-feet sub lots.
- b) Take roadway samples at a minimum frequency of 1 per lot of production.
- c) For each roadway sample, report the gradation of material as determined by use of a rocker screen, or equal, for the 1" sieve and larger.
- d) Report stabilizing agent foaming properties, if applicable, (i.e. half-life and expansion ratio) at a minimum frequency of 1 per lot of production.
- e) Conduct and report density testing at a minimum frequency of 3 random tests per sub lot.
- f) Conduct and report mill depth checks at a minimum frequency of 1 per sub lot.
- g) Report stabilizing agent temperature and application rate at a minimum frequency of 1 per sub lot.
- h) Provide a Daily Inspection Report to the Engineer summarizing the: daily beginning and ending stations, applicable mix design, sub lot test (mill depth check, density test, stabilizing agent temperature and application rate) locations and values, lot roadway sample locations, and any adjustments to the application rate of the stabilizing agent or water.
- i) If stabilizing agent adjustments exceed the allowable limits defined in the mix design, or reduce the stabilizing agent application rate below the 1.5% mix design minimum specified in Table 2B, based on a single test or meter adjustment, re-evaluate the entire process. Obtain approval by the Engineer before resuming

production.

4) Owner Testing

- a) The Owner may conduct quality verification (QV) testing to validate the quality of the product, and independent assurance (IA) testing to evaluate the sampling and testing. The Owner will provide the Contractor with a listing of names and telephone numbers of all QV and IA personnel for the project and provide test results to the Contractor within 5 business days after the Owner obtains the sample.
- b) If the Owner identifies a deficiency, and after further investigation confirms it, the Contractor shall correct that deficiency. If the Contractor does not correct or fails to cooperate in resolving identified deficiencies, the Engineer may suspend placement until action is taken.

7. CONSTRUCTION

1) General

- a) Unless the contract provides otherwise, keep the road open to traffic during construction.
- b) Perform CIR operations only between the dates of April 15 and October 15 when the pavement temperature in the shade is above 55°F, when the ambient air temperature approximately 3 feet above grade, in shade, and away from artificial heat sources is above 50°F and rising, and when the nighttime ambient air temperature is above 45°F the night prior and following, unless approved otherwise by the Engineer.
- c) Do not perform CIR operations during inclement weather such as heavy rain that will not allow proper mixing, placing, and/or compacting of the mixture.
- d) CIR operations and recycled pavement curing to allow adequate time for placement of the complete finish wearing course prior to the onset of winter. The finish wearing course should be applied to protect the CIR no later than thirty (30) days after the CIR process begins.

2) Equipment

- a) Equipment used for CIR shall be subject to approval by the Engineer.
- b) Tankers supplying hot stabilizing agent components shall be equipped to constantly monitor temperature within the tank.
- c) Portland cement bulk spreader must be fully automated and capable of achieving the application rate specified in the mix design. Portland cement spreader shall also be equipped with a water misting spray bar to reduce the amount of airborne cement dust from the spreading operation.

3) Milling Machine

- a) Utilize milling units not inclusive of pre-mill/wedge-cut milling units capable of milling the existing pavement full lane width (12'- 6" minimum) in a single pass to the depth shown on the plans, specified in the contract, or directed by the Engineer. The minimum mechanical power rating of this machine shall be 900 horsepower.
- b) Utilize units equipped with automatic depth control that maintain constant cutting depth and width, uniform grade, and uniform slope.

- c) For processes not incorporating additional screening, sizing, or crushing, utilize a down-cutting milling unit capable of producing RAP sized as specified in 2 (a).
- d) Use of a heating device to soften the pavement is not permitted.

4) Asphalt Foaming and Mixing Unit

- a) Processed RAP shall be mixed with the foamed asphalt stabilizing agent and water in a mixing unit which shall be the milling machine cutter housing. The system shall be capable of producing a uniformly blended, homogenous recycled pavement mixture.
- b) The foamed asphalt stabilizing agent shall be applied uniformly at the predetermined application rate using a computer controlled additive system. Monitor the metering of the stabilizing agent through a calibrated pump providing a continuous readout of quantities.
- c) The machine shall have two separate systems for adding foamed asphalt and water with each system having a full-width spray bar with a positive displacement pump interlocked to the machine's ground speed to ensure that the amount of foamed asphalt and water being added is automatically adjusted with changes to the machine's forward speed.
- d) Each additive shall have its own spray bar equipped with individual valves capable of being turned off as necessary to minimize foamed asphalt and water dosing overlap on subsequent passes.
- e) The foaming system must meet the following requirements:
 - a. The foamed asphalt shall be produced at the spray bar in individual expansion chambers into which both the hot asphalt binder and water are injected under pressure through individual and separate orifices that promote atomization. The rate of addition of water into the hot asphalt binder shall be kept at a constant rate (percentage by mass of asphalt binder) by a computerized system.
 - b. The machine shall be equipped with an inspection test nozzle that produces a representative sample of foamed asphalt. Test nozzle shall be an exact replica of the foamed asphalt spray bar nozzles.
 - c. The system shall have an electrical heating system capable of maintaining the temperature of all foamed asphalt flow components at the optimal foaming temperature and above 320°F.
 - d. The machine shall utilize a single asphalt binder feed line installed between the recycler and the supply tanker. Circulating systems that incorporate a return line to the supply tanker shall not be used.
 - e. The foam injection system must have a continual self-cleaning feature enabled during the process to ensure all injectors are operational.

5) Paving Equipment

- a) The placement and shaping of the recycled pavement mixture shall be completed using a self-propelled paver, with a minimum 10' and maximum 20' screed width.
- b) The screed shall not be heated when paving the recycled mix.
- c) The material shall be transferred directly into the paver hopper from the recycling equipment.

6) Compaction Equipment

- a) Compaction equipment shall be a minimum of 9 tons, self-propelled and include both dual smooth drum vibratory and pneumatic rollers.
- b) The number and types of rollers shall be as necessary to achieve the specified compaction and surface smoothness required for the finish wearing course.

7) Preparation

- a) Inspect the pavement surface for any areas of failing subgrade. If needed, repair areas will be saw cut, and all inferior material shall be taken out. Removed materials shall be replaced with clean granular material compacted in lifts not to exceed 6" in thickness, up to within 6" of the road surface. The final 6", bringing the repair to road grade, shall be done with 3/4" hot mix binder.
- b) If pre-milling to remove the material ahead of recycling is warranted, it will be paid under the "Pre-milling".
- c) Any blading of the existing roadway shoulders away from the asphaltic surface edge to minimize contamination of the CIR pavement will be the responsibility of the Owner.
- d) Saw cutting cost shall be incidental to the repair. Gravel to be priced by the cubic yard, and hot mix asphalt to be priced by the ton.
- e) Any trimming and clearing of low tree branches and brush removal that may impede operations or mobilization of CIR vehicles and equipment will be the responsibility of the Owner.

8) Processing and Placement of Recycled Pavement Mixture

- a) Mill the existing pavement to the required depth and width indicated on the plans.
- b) Blend the RAP material with the mix design specified proportions of stabilizing agent and water; produce a uniform and homogeneous recycled mixture.
- c) Spread the recycled mixture to the grade, elevations, and slopes specified on the plans, avoiding tearing or scarring of the recycled pavement surface.
- d) Ensure proper material transfer, handling, and spreading to prevent particle segregation.
- e) Overlap longitudinal joints between successive CIR operations a minimum of 3 inches. Overlap transverse joints between successive CIR operations a minimum of 2 feet. Control the addition of foamed asphalt to the CIR in overlap areas in order to avoid excessive localized high asphalt content in the CIR layer.

9) Compaction - Control Strip Construction

- a) On the first day of production, construct a control strip to identify the target wet density for the CIR layer. Perform the control strip construction and density testing under the direct observation and/or assistance of the Engineer.
- b) Unless the Engineer approves otherwise, construct control strips to a minimum dimension of 500 feet long and one full lane width.
- c) Completed control strips may remain in-place to be incorporated into the final

roadway cross-section.

- d) Construct additional control strips at a minimum, when:
 - The CIR layer thickness changes in excess of 2.0 inches, or
 - The percent of target density is less than 90% or exceeds 105.0% and is outside the range of the 10 random measurements defining the control strip, on three consecutive sub lots.
- e) Construct control strips using equipment and methods representative of the operations to be used for constructing the CIR layer.
- f) After compacting the control strip with a minimum of 2 passes, mark and take density measurements at 3 random locations, at least 1½ feet from the edge of the CIR layer. Take subsequent density measurements at the same 3 locations.
- g) After each subsequent pass of compaction equipment over the entirety of the control strip, take density measurements at the 3 marked locations. Continue compacting and testing until the increase in density measurements is less than 2.0 lb/cubic feet, or the density measurements begin to decrease.
- h) Upon completion of control strip compaction, take 10 randomly located density measurements within the limits of the control strip, at least 1½ feet from the edge of the base. The final measurements recorded at the 3 locations under paragraph 6 of this section may be included as 3 of the 10 measurements. Average the 10 measurements to obtain the control strip target density.

10) Compaction Requirements

Compact the CIR layer to a required minimum density of 95% of the target density.

11) Surface Requirements

- a) Test the pavement surface at regular intervals using a 10-foot straightedge or other Engineer-specified device.
- b) The Engineer may direct the repair of surface deviations greater than 1/4 inch between two surface contact points. Correct high points by reworking, rerolling, trimming, milling, or grinding. Minor depressions greater than 3/4 inch may be corrected by reworking or have a tack coat applied and be filled with HMA immediately prior to placement of the surface treatment.

12) Maintaining the Work

- a. After compaction is complete, determine whether the CIR is sufficiently stable and cured adequately to open to traffic.
- b. Apply a fog seal to minimize raveling and reduce water intrusion into the recycled pavement by the end of each CIR treatment day. Fog seal shall be a diluted CSS-1h emulsion (50% emulsion, 50% water), or approved equal.

- c. After opening to traffic, and prior to placing a surface treatment, maintain the surface of the recycled pavement in a condition suitable for safe movement of traffic.
- d. Repair any damage to the recycled pavement prior to placement of the wearing course at no additional cost to the Owner. If Owner elects to have a separate Contractor install the wearing course and the wearing course is not applied within thirty (30) days of the CIR completion per Section 4.a.4 above, Owner shall relieve the CIR Contractor of responsibility for any repairs that may be required.

13) Keyways and Miscellaneous Milling as a Day Rate

Cutting keyways and miscellaneous milling to provide a smooth transition from the new hot mix paving over the CIR layer to the existing pavement at side roads, intersections, project limits, etc. are to be performed by the paving Contractor. In the event the Owner prefers this keyway and miscellaneous milling to be done by the CIR Contractor, this work will be performed and paid on a daily rate basis in accordance with bid ITEM 15, "Keyways and Miscellaneous Milling." The daily rate shall include all milling equipment and labor to perform the work but exclude trucking (by Owner or to be paid by the hour, bid ITEM 6) and shall exclude traffic control.

14) Curing and Surfacing

- 1) Application of a surface treatment will not be allowed until the moisture content of the CIR layer is not more than 1.5%.
- 2) If the moisture content of the CIR layer does not reduce to 1.5%, the surface treatment may be applied after the change in moisture content is less than 0.10 percentage points for three consecutive calendar days.
- 3) The finish wearing course should be applied as soon as curing is complete, not more than 14 days after the recycling process begins.
 - Immediately before the application of the finish wearing course, an asphalt emulsion tack coat shall be applied at a minimum rate of 0.05 gal/SY.
 - Do not use a hot asphaltic cement tack coat.

15) Down Time

If Contractor's daily production is stopped due to no fault of its own (i.e. buried utility structures not identified, parked cars not removed, etc.), the labor and equipment costs incurred during the delay period will be paid at the bid hourly rate (ITEM 18).

8. MEASUREMENT AND PAYMENT

Table D.14

DESCRIPTION	UNIT
Cold In-place Recycling (CIR) Including Fog Seal	SY
Liquid Asphalt Stabilizing Agent	GAL
Portland Cement Stabilizing Agent	TON

- a) The Owner will measure the Cold In-place Recycling (CIR) bid item as acceptably completed by the square yard.
- b) The Owner will measure the Liquid Asphalt and Portland Cement Stabilizing Agents incorporated into the work by the gallon and by the ton, respectively, as metered through a calibrated pump, calibrated auger, or through delivered ticket quantity, acceptably completed.
- c) Payment is full compensation for measured quantities as specified above; all material including mixing and milling water; equipment necessary for milling and sizing, mixing, paving, compacting the completed CIR and fog seal to maintain the completed CIR.
- d) For roadways where Owner elects to have Contractor install additional RAP or virgin aggregate on top of the existing pavement ahead of the milling machine to thicken the recycled layer, Owner shall furnish and deliver the virgin aggregate or screened and sized RAP (1" minus) to Contractor's spreading equipment. RAP or virgin aggregate shall be delivered at a rate adequate not to slow down the subsequent recycling operation. Contractor shall be paid for spreading this additional virgin aggregate or RAP layer by the SY, under the separate bid item "Pave RAP or Aggregate Ahead of Recycler" (ITEM 8). A sample of the RAP or virgin aggregate to be used will be supplied to the Contractor to develop mix design(s).

9. METHOD OF AWARD

- e) To ensure Contractor accountability, the Owner intends to award all items to a single Contractor. Accordingly, Contractors must bid on all items of work, and the low bidder will be the Contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.
- f) To ensure the Contractor's capabilities, the bidder shall provide with his bid evidence of his current State DOT prequalification status, for the categories of work contained herein. Bidder shall also submit with his bid documented experience of at least ten (10) foamed asphalt stabilized CIR jobs totaling a minimum of 250,000 square yards including the street names and limits, year completed, Owner agency name and contact information for verification purposes.

10. ASPHALT PRICING AND PRICE ADJUSTMENTS

- a) **Asphalt Price Adjustments:** Contractor's bid prices below shall be based upon the current State DOT asphalt cement index posted exactly two (2) weeks prior to the due date for receipt of bids ("Bid Index"). If the posted State DOT asphalt cement index in place when the work is performed differs by more than 5% from the Bid Index, then Contractor's invoices shall include price adjustments for the asphaltic materials based on the actual gallons incorporated into the work.
- b) **Future Year Price Adjustments:** The Owner agency reserves itself the option to extend the use, terms, conditions, and prices of this bid for an additional five (5) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

ITEM 17
PRE-MILLING PAVEMENT

11. DESCRIPTION

Work under this item shall be done in conjunction with the CIR. The work shall consist of removing, by cold-planer, asphalt pavement in designated areas. The milled material shall become the property of the Owner to be disposed of or recycled.

12. EQUIPMENT

- a) The miller, and any other motorized vehicular equipment, shall be equipped with taillights, headlights, and necessary reflectors so that they can be operated in traffic with complete safety.
- b) The milling machine shall be adjustable as to crown and minimum depth of 1/8". The width of the cutting drum shall be a minimum of 51"
- c) The equipment shall be capable of accurately and automatically establishing profile grade along each edge of the machine (within 1/8-inch, more or less) by referencing from the existing pavement by means of a ski or matching shoe controlling cross slope at a given rate.
- d) The machine shall be capable of being operated at speeds from 18 to 40 feet per minute and designed so that the operator can, at all times, observe the operations without leaving his control area.
- e) The equipment furnished by the contractor shall be in good repair and shall be maintained so as to produce a clean cut into the pavement at all times.
- f) The machine shall be equipped with an integral loading and reclaiming means to immediately remove material being cut from the surface of the roadway and discharge the cuttings into a truck, all in one operation. This machine shall be equipped with a floating moldboard cutting device which is behind the mandrel, and such moldboard must have an infinitely variable down pressure from 0-300 PSI.

13. CONSTRUCTION METHOD

- a) The milling machine shall be delivered to the project limits on a trailer. The machine shall be loaded on to the trailer to be transferred from work site to work site. The Owner shall not "walk" the machine to the next site unless prior approval from the Engineer is granted.
- b) Once the milling process has begun, the contractor is obliged to carry this effort forward without interruption, yet in accordance with all work hour restrictions unless otherwise directed by the Engineer
- c) No asphalt millings shall remain on-site at the end of each day. Material resulting from the operation shall become the property of the Owner and disposed of at an Owner-furnished disposal site. Existing catch basins shall be protected in place to not allow loose material to enter structures.
- d) Owner to provide trucking of pre-millings from the project. If contractor is required to provide trucking of pre-millings, it will be paid for under ITEM 6 – Trucking.

14. METHOD OF AWARD

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

15. MEASUREMENT AND PAYMENT

Pre-Milling: The bid price per SY will be multiplied by the number of inches of depth milled to calculate the final payment amount per square yard.

Payment for this item is only required when the pre-milling is being done to remove material in order to maintain or control final paving grades. If the pre-milling is done solely for the Contractor's convenience to recycle pavement areas wider than the drum on the recycler (12'-6" minimum), no payment shall be made for pre-milling and the additional recycled roadway width will be paid for under ITEM 3, "Cold In-place Recycling (CIR) Including Fog Seal."

ITEM 18 – BASE REPAIR - HOT MIX ASPHALT

ITEM 19 – BASE REPAIR - GRAVEL

16. DESCRIPTION

If needed, repair areas will be saw cut, and then all inferior material shall be removed. Gravel will then be placed and compacted in 6" lifts. The final 6", bringing the repair area to road grade, shall be done with $\frac{3}{4}$ " hot mix binder.

17. METHOD OF AWARD

To ensure Contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

18. MEASUREMENT AND PAYMENT

Saw cutting cost shall be incidental to the repair. Gravel to be paid by the cubic yard, and hot mix asphalt to be paid by the ton.

19. ASPHALT PRICE ADJUSTMENTS

Asphalt Price Adjustments: Contractor's bid prices below shall be based upon the current State DOT asphalt cement price index posted exactly two (2) weeks prior to the due date for receipt of bids ("Bid Index"). If the posted State DOT asphalt cement price index in place when the work is performed differs from the Bid Index, up or down, then Contractor's invoices shall include price adjustments for the asphaltic materials, and these adjustments shall be calculated based on the actual tons of liquid asphalt cement incorporated into the work.

ITEM 20

LOWERING AND RAISING OF EXISTING STRUCTURES (FRAMES AND GRATES OR FRAMES AND COVERS)

1. MATERIALS

- a) Concrete collars will be constructed using 4,000 PSI cement concrete masonry or hot mix asphalt compacted in lifts not to exceed 6", at no additional cost. A minimum of four (4) inches of hot mix asphalt shall be placed around the adjusted structure and compacted to the underlying grade of the proposed wearing surface, and this work will be considered incidental to the above item's unit price. All concrete collars will be completely coated with (RS-1) asphaltic emulsion before placement of hot mix asphalt. The brick to be used shall be clay brick.
- b) Concrete collars shall be constructed with high early strength cement. Concrete collars shall be incidental to the item of work to which they pertain.
- c) Use of steel plates to cover open structures shall be considered incidental to the work and not cause for additional compensation. Multiple adjustments that may be necessary as a result of the work sequence shall be considered part of the one-time measurement and payment and not cause for additional compensation

2. ENGINEERING

- a) In all roadways, the castings shall be lowered to the top of the structure base.
- b) After the CIR, castings shall be raised to the final grade.
- c) Damaged or obsolete castings shall be replaced with new castings as directed by the Engineer. Frames, grates, and covers will be furnished by the Owner.
- d) The Contractor shall properly dispose of the old damaged or obsolete castings. No additional compensation will be made for disposal of the old castings.

3. METHOD OF AWARD

To ensure contractor accountability, the Owner intends to award all items to a single contractor. Accordingly, contractors must bid on all items of work, and the low bidder will be the contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

4. MEASUREMENT AND PAYMENT

Compensation for all labor, materials (including cement concrete, hot mix asphalt, and asphaltic emulsion), equipment and incidentals to construct the collars shall be included in the contract unit price of this item. The quantity to be measured for payment will be the number of catch basins and manholes adjusted, to be paid for at the unit price per each. Measurement shall be by each catch basin or manhole adjusted and approved by the Engineer.

In instances where the structure base is more than one foot (12") below the final rim elevation of the adjusted casting, the additional required structure rebuild will be paid for by the vertical foot under

ITEM 21

**STRUCTURE REBUILD FOR EVERY FOOT BEYOND THE INITIAL ONE
FOOT. (SEE CIR ITEM 19 – 4)**

ITEM 22

**ADJUSTMENT OF EXISTING WATER GATES
AND OTHER SMALL STRUCTURES (BOX OR SERVICE)**

5. CONSTRUCTION METHOD

- a) Valve boxes are to be lowered prior to the CIR process and raised after the CIR process. They shall be installed vertically, centered over the operating nut, and the elevation of the top shall be adjusted to final grade.
- b) Boxes shall be continuously and adequately supported during backfilling to maintain vertical alignment.
- c) Bricks shall be placed at the base of the flange to properly support the box.
- d) Backfill around valve boxes, and anywhere excavation is made in the street, shall be compacted in lifts not exceeding 6 inches.
- e) The boxes and tops shall be furnished by the Owner.
- f) The Contractor shall properly dispose of any old damaged or obsolete castings. No additional compensation will be made for disposal of old castings.

6. METHOD OF AWARD

To ensure Contractor accountability, the Owner intends to award all items to a single Contractor. Accordingly, Contractors must bid on all items of work, and the low bidder will be the Contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

7. MEASUREMENT AND PAYMENT

The unit price payment for this item will be for all work described above, for each water gate or other small structure adjusted.

ITEM 23

BACKING UP ROAD EDGE

8. CONSTRUCTION METHOD

- a) If determined by the Owner that backing up of road edge is required, additional material shall be placed at a maximum width of 2'.
- b) Owner to provide material and trucking.

9. METHOD OF AWARD

To ensure Contractor accountability, the Owner intends to award all items to a single Contractor. Accordingly, Contractors must bid on all items of work, and the low bidder will be the Contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

10. MEASUREMENT AND PAYMENT

- a) Cost of placement shall be charged by the linear foot.
- b) If Owner wishes to have Contractor provide trucking, it will be paid under **ITEM 6 – Trucking at a unit rate of per hour, per truck.**

11. FUTURE YEAR PRICE ADJUSTMENTS

The Owner reserves itself the option to extend the use, terms, conditions, and prices of this bid for an additional five (5) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending the contract.

ITEM 24 Keyways and Miscellaneous Pavement Milling

1. DESCRIPTION

Work under this item shall apply to areas that shall be resurfaced but cannot be cold-recycled such as turning lanes, intersection tie-ins, median crossings, etc. Unless otherwise specified herein, all work shall be done in accordance with the most recent version of the Massachusetts Department of Transportation Standard Specification for Roads and Bridges, Subsection 415 – Pavement Milling. The work shall consist of removing, by cold-planer, asphalt pavement in designated areas. The milled material shall become the property of the Owner to be disposed of or recycled.

2. EQUIPMENT

- a) The miller, and any other motorized vehicular equipment, shall be equipped with taillights, headlights, and necessary reflectors so that they can be operated in traffic with complete safety.
- b) The milling machine shall be adjustable as to crown and minimum depth of 1/8". The width of the cutting drum shall be a minimum of 51"
- c) The equipment shall be capable of accurately and automatically establishing profile grade along each edge of the machine (within 1/8-inch, more or less) by referencing from the existing pavement by means of a ski or matching shoe controlling cross slope at a given rate.
- d) The machine shall be capable of being operated at speeds from 18 to 40 feet per minute and designed so that the operator can, at all times, observe the operations without leaving his control area.
- e) The equipment furnished by the Contractor shall be in good repair and shall be maintained so as to produce a clean cut into the pavement at all times.
- f) The machine shall be equipped with an integral loading and reclaiming means to immediately remove material being cut from the surface of the roadway and discharge the cuttings into a truck, all in one operation. All milling machinery shall be equipped with dust control devices to prevent any dust produced in the cutting operation from escaping into the air, in compliance with EPA air quality standards. The equipment shall meet the standards set by the Air Quality Act for noise and pollution. This

machine shall be equipped with a floating moldboard cutting device which is behind the mandrel, and such moldboard must have an infinitely variable down pressure from 0-300 PSI.

3. CONSTRUCTION METHOD

- a) The milling machine shall be delivered to the project limits on a trailer. The machine shall be loaded on to the trailer to be transferred from work site to work site. The Owner shall not "walk" the machine to the next site unless prior approval from the Engineer is granted.
- b) Once the milling process has begun, the Contractor is obliged to carry this effort forward without interruption, yet in accordance with all work hour restrictions unless otherwise directed by the Engineer
- c) No asphalt millings shall remain on-site at the end of each day. Material resulting from the operation shall become the property of the Owner and disposed of at an Owner-furnished disposal site. Existing catch basins shall be protected in place to not allow loose material to enter structures.
- d) Owner to provide trucking of millings from the project. If Contractor is required to provide trucking of millings, it will be paid for under **ITEM 6 – Trucking**

4. METHOD OF AWARD

To ensure Contractor accountability, the Owner intends to award all items to a single Contractor. Accordingly, Contractors must bid on all items of work, and the low bidder will be the Contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

5. MEASUREMENT AND PAYMENT

The bid price per Day will be multiplied by the number of actual milling days worked to calculate the final payment amount.

6. FUTURE YEAR PRICE ADJUSTMENTS

The Owner reserves itself the option to extend the use, terms, conditions, and prices of this bid for an additional five (5) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending the contract.

ITEM 25

Remove and Replace Existing Pavement in Areas Not Accessible to the Recycler

1. CONSTRUCTION METHOD

In areas where the recycling equipment is not able to access the entire roadway area to be rehabilitated (i.e., intersection flares, perimeters of cul-de-sacs, ends of streets at T-shaped intersections, etc.), the Owner may require the Contractor to remove the existing pavement, full or partial depth, and replace it with $\frac{3}{4}$ " hot mix asphalt (HMA) binder before the installation of the wearing course.

Removal of the existing pavement from these areas will generally be accomplished using a smaller milling machine (4-foot drum width or less), milling to depths as specified by the Owner, and with the millings being removed from the site to the Owner's stockpile area.

Replacement of the removed materials shall be accomplished with HMA binder meeting the material and installation requirements of Massachusetts Department of Transportation Standard Specifications Section 460.

2. METHOD OF AWARD

To ensure Contractor accountability, the Owner intends to award all items to a single Contractor. Accordingly, Contractors must bid on all items of work, and the low bidder will be the Contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

3. MEASUREMENT AND PAYMENT

- c) Cost of removal will be paid under ITEM 15 "Keyways and Miscellaneous Milling" by the Day.
- d) Cost of replacement will be paid by the Ton based on the actual quantity of new HMA installed, with copies of scale tickets provided to the Owner.
- e) If Owner wishes to have Contractor provide trucking of the millings removed or the new HMA installed, it will be paid under ITEM 6 "Trucking" at a unit rate per hour, per truck.

4. ASPHALT PRICING AND PRICE ADJUSTMENTS

- 1) **Asphalt Price Adjustments:** Contractor's bid prices below shall be based upon the current State DOT asphalt cement price index posted exactly two (2) weeks prior to the due date for receipt of bids ("Bid Index"). If the posted State DOT asphalt cement price index in place when the work is performed differs from the Bid Index, up or down, then Contractor's invoices shall include price adjustments for the asphaltic materials, and these adjustments shall be calculated based on the actual tons of liquid asphalt cement incorporated into the work.
- 2) **Future Year Price Adjustments:** The Owner reserves itself the option to extend the use, terms, conditions, and prices of this bid for an additional five (5) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

ITEM 26

HMA WEARING COURSE PAVING

1. DESCRIPTION

Work under this item shall apply to areas that shall be resurfaced with hot-mix asphalt. Unless otherwise specified herein, all work shall be done in accordance with the most recent version of the Massachusetts Department of Transportation Standard Specification for Roads and Bridges, section M3-Asphaltic Materials. The work shall consist of the production,

delivery, placement, and compaction of a uniform textured, non-segregated, smooth bituminous concrete pavement to the grade and cross section shown on the plans, or as otherwise directed by the Owner.

2. EQUIPMENT

- a) The paver shall have a receiving hopper with sufficient capacity to provide for a uniform spreading operation and a distribution system that places the mix uniformly, without segregation. The screed system shall be capable of producing a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture. Auger extensions and tunnel extenders shall be used when necessary. Automatic screed controls for grade and slope shall be used unless otherwise authorized by the Engineer. The controls shall automatically adjust the screed to compensate for irregularities in the preceding course or existing base. The controls shall maintain the proper transverse slope and be readily adjustable and shall operate from a fixed or moving reference such as a grade wire or floating beam (minimum length 20 feet).
- b) All rollers shall be self-propelled and designed for compaction of bituminous concrete. Roller types shall include steel wheeled, pneumatic, or a combination thereof. Rollers that operate in a dynamic mode shall have drums that use a vibratory or oscillatory system or combination. Vibratory rollers shall be equipped with indicators for amplitude, frequency, and speed settings/readouts to measure the impacts per foot during the compaction process. Oscillatory rollers shall be equipped with frequency indicators. Rollers can operate in the dynamic mode using the oscillatory system on concrete structures such as bridges and catch basins if at the lowest frequency setting. Pneumatic tire rollers shall be equipped with wide-tread compaction tires capable of exerting an average contact pressure from 60 to 90 psi uniformly over the surface. The Contractor shall furnish documentation to the Engineer regarding tire size, pressure and loading to confirm that the proper contact pressure is being developed and that the loading and contact pressure are uniform for all wheels.
- c) All equipment shall be in good working order and any equipment that is worn, defective, or inadequate for performance of the work shall be repaired or replaced by the Contractor to the satisfaction of the Engineer.

3. CONSTRUCTION METHOD

- a) Prior to the placement of the mixture, the underlying base course shall be brought to the plan grade and cross section within the allowable tolerance. Immediately before placing a bituminous concrete lift, a uniform coating of tack coat shall be applied to all existing underlying pavement surfaces and on the exposed surface of a wedge joint. Such surfaces shall be clean and dry. Sweeping or other means acceptable to the Engineer shall be used. The mixture shall not be placed whenever the surface is wet or frozen.
- b) The tack coat shall be applied by a pressurized spray system that results in uniform overlapping coverage at an application rate of 0.05 to 0.07 gal./s.y. The Engineer must approve the equipment and the method of measurement prior to use. The material for tack coat shall be heated to $160^{\circ}\text{F} \pm 10^{\circ}\text{F}$ and shall not be further diluted. Tack coat shall be allowed sufficient time to break prior to any paving equipment or haul vehicles driving on it.
- c) The mixture shall be placed and compacted to provide a smooth, dense surface with a uniform texture and no segregation at the specified thickness and dimensions indicated in the plans and specifications.

- d) The Contractor shall inspect the newly placed pavement for defects in mixture or placement before rolling is started. Any deviation from standard crown or section shall be immediately remedied by placing additional mixture or removing surplus mixture. Such defects shall be corrected to the satisfaction of the Engineer.
- e) Where it is impracticable due to physical limitations to operate the paving equipment, the Engineer may permit the use of other methods or equipment. Where hand spreading is permitted, the mixture shall be placed by means of suitable shovels and other tools, and in a uniformly loose layer at a thickness that will result in a completed pavement meeting the designed grade and elevation.

4. METHOD OF AWARD

To ensure Contractor accountability, the Owner intends to award all items to a single Contractor. Accordingly, Contractors must bid on all items of work, and the low bidder will be the Contractor whose total bid price is the lowest. The bid quantities are not guaranteed, and their primary purpose is for the determination of the low bidder.

5. MEASUREMENT AND PAYMENT

The furnishing and placing of bituminous concrete will be paid for at the bid unit price per Ton with the Contractor to provide copies of scale tickets for each load of material incorporated into the work.

The required tack coat shall be considered incidental to the hot mix asphalt and not paid separately.

Contractor's pricing shall be based on a minimum of 500 tons per day for mobilization purposes.

6. ASPHALT PRICING AND PRICE ADJUSTMENTS

- a) **Asphalt Price Adjustments:** Contractor's bid prices below shall be based upon the current State DOT asphalt cement price index posted exactly two (2) weeks prior to the due date for receipt of bids ("Bid Index"). If the posted State DOT asphalt cement price index in place when the work is performed differs from the Bid Index, up or down, then Contractor's invoices shall include price adjustments for the asphaltic materials, and these adjustments shall be calculated based on the actual tons of liquid asphalt cement incorporated into the work.
- b) **Future Year Price Adjustments:** The Owner reserves itself the option to extend the use, terms, conditions, and prices of this bid for an additional five (5) years after the first year in which the contract is awarded. Such extension will be subject to the Owner reviewing and approving the Contractor's annual request for a price adjustment based on and limited to the prior year's actual rate of inflation. If such price adjustment cannot be mutually agreed upon between the Owner and Contractor, Owner may choose to re-bid the work in lieu of extending this contract.

**DIVISION II
CONSTRUCTION DETAILS**

**SUBSECTION 120
EXCAVATION**

DESCRIPTION

120.20 GENERAL

Add the words “Removal and Disposal of surplus road base” after the words “Unclassified Excavation” in the last sentence of the first paragraph.

Add the following at the end of this subsection:

All locations to be excavated shall be stripped of topsoil prior to excavation. This work shall be paid at the unit price for topsoil excavated and stacked.

The contractor will be responsible for obtaining all the necessary permits and for finding a proper area to dispose of surplus material.

Any Petramat or other fabric material that is encountered during cold planer operations and not thoroughly bonded to the existing asphalt shall be removed by the contractor prior to proceeding with resurfacing.

Add the following new subsection:

SUBSECTION 120.27 REMOVAL AND DISPOSAL OF SURPLUS ROAD BASE

This work shall include the excavation of excess reclaimed road base as directed by the engineer. All surplus material resulting from reclamation and not needed for use on the project, as determined by the Engineer, shall be disposed of by the contractor outside and away from the limits of the project, with no additional measurement or payment.

Add the following new subsection:

SUBSECTION 120.28 EXCAVATION FOR PATCHING

This work shall include the excavation of existing pavement and/or sub-base as well as any boulders or rock below the sub-base as necessary. The work shall also include the grading and compaction of sub-base to the required cross section as shown on the plans or as directed by the Engineer. All surplus material resulting from excavation and not needed for use on the project, as determined by the Engineer, shall be disposed of by the contractor outside and away from the limits of the project, with no additional measurement or payment.

CONSTRUCTION METHODS

SUBSECTION 120.60 GENERAL

Add the following at the end of this subsection:

D. Care when excavating for sidewalks

The Contractor shall take all necessary precautions to prevent damage to walls, building foundations, and fences abutting sidewalks and driveways designated for replacement. Where required, new sidewalks shall meet said walls and fences. Prior to sidewalk removal, a sawcut shall be provided in all sidewalks to be removed a distance, to be determined by the Town of Lexington Department of Public Works (6 inches minimum) from the face of adjacent buildings, retaining walls, and fences. The final 6 inches (minimum) of sidewalk will be removed with caution under the resident Town of Lexington Department of Public Works' supervision. There will be no additional payment for labor or equipment necessary to meet this "remove with caution" requirement. The Contractor is responsible for damage to walls, foundations and fences due to his construction activities and shall be repaired at the Contractor's own cost. Any brick, paver, or stamped concrete/asphalt sidewalk, crosswalk, or roadway disturbed by construction activity shall be repaired by the Contractor at no additional cost. Any brick, paver, or stamped concrete/ asphalt sidewalk, crosswalk, or roadway damaged or to be restored shall match the same materials that exist, including concrete base if appropriate, unless otherwise indicated on the plans, or directed by the Engineer.

When practical sawcuts shall be made at existing control joints.

SUBSECTION 120.65 TOPSOIL EXCAVATED AND STACKED

Add the following at the end of this subsection:

The Contractor will restore any areas used or damaged in the stockpiling operation at his own expense.

SUBSECTION 120.66 HOT MIX ASPHALT EXCAVATION BY COLD PLANER

In the third paragraph change the word 'three' to 'four':

Add the following at the end of this subsection:

Any Petramat or other fabric material that is encountered during cold planer operations and not thoroughly bonded to the existing asphalt shall be removed and properly disposed of by the contractor prior to proceeding with resurfacing as directed by the engineer. Removal shall be performed with the use of a utility knife or other method approved in advance by the engineer.

Add the following new subsection:

SUBSECTION 120.68 REMOVAL AND DISPOSAL OF SURPLUS ROAD BASE

This work shall include the excavation, removal and satisfactory disposal, in accordance with relevant provisions of Section 120.60 of all materials listed under Section 120.27 as directed by the engineer.

COMPENSATION

SUBSECTION 120.80 METHOD OF MEASUREMENT

Add the following at the end of this subsection:

Any rock or boulders that must be excavated and measure less than one cubic yard in volume shall be considered incidental to the excavation work with no additional measurement of payment to be made. Any rock or boulders that must be excavated and measure one cubic yard or greater in volume shall be considered Class A Rock and shall be measured in accordance with the pay limits as described above.

Any Petramat or other fabric material removed and disposed of as part of cold planer operations shall be measured by man-hours needed to perform the removal of the material on site.

SUBSECTION 120.81 BASIS OF PAYMENT

Add the following at the end of this subsection:

Any Petramat or other fabric material removed and disposed of as part of cold planer operations shall be paid by man-hours needed to perform the removal of the material on site.

SUBSECTION 120.82 PAYMENT ITEMS:

Replace the following MassDOT Item Numbers:

ITEM 120.1	Unclassified Excavation	CUBIC YARD
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With the Following Item Numbers:

ITEM 27	Unclassified Excavation	CUBIC YARD
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SUBSECTION 150 EMBANKMENT

CONSTRUCTION METHODS

SUBSECTION 150.64 BACKFILLING FOR STRUCTURES AND PIPES

Revise the 2nd sentence of this subsection to read as follows:

When suitable backfill material cannot be obtained from excavation, gravel borrow shall be used.

COMPENSATION

SUBSECTION 150.82 PAYMENT TERMS

Replace the following MassDOT Item Numbers:

ITEM 151.2 Gravel Borrow for Backfilling Structures and Pipes	CUBIC YARD
ITEM 156 Crushed Stone for Drainage,	TON
Revetment, and/or Water Works Foundations	

With the Following Item Numbers:

ITEM 28 Gravel Borrow for Backfilling Structures and Pipes CUBIC YARD
ITEM 29 Crushed Stone for Drainage, TON
Revetment, and/or Water Works Foundations

SUBSECTION 170 GRADING

SUBSECTION 170.82: PAYMENT ITEMS:

Replace the following MassDOT Item Numbers:

ITEM 170. Fine Grading and Compacting – Subgrade Areas SQUARE YARD

With the Following Item Numbers:

SUBSECTION 220

ADJUSTMENT, REBUILD, AND REMODELING OF DRAINAGE STRUCTURES

SUBSECTION 220.82: PAYMENT ITEMS:

Replace the following MassDOT Item Numbers:

Vertical Foot
Each
Each

With the following Item Numbers:

ITEM 31	Drainage Structure Rebuilt	Vertical Foot
ITEM 32	Drainage Structure Change in Type	Each
ITEM 33	Drainage Structure Remodeled	Each

SUBSECTION 402
DENSE GRADED CRUSHED STONE FOR SUB-BASE

CONSTRUCTION METHODS

SUBSECTION 402.61 SPREADING AND COMPACTING

Add the following at the end of this subsection:

The overall depth of the Gravel for Base Course layer shall be no greater than 8 inches after compaction.

COMPENSATION

SUBSECTION 402.80 METHOD OF MEASUREMENT

Add the following at the end of this Subsection:

When quantities of Dense Graded Crushed Stone for Sub-base or Shoulder Backup are given in tons, a factor of 1.65 tons per cubic yard will be used to convert the measurement to cubic yards.

SUBSECTION 402.82 PAYMENT ITEMS

Replace the following MassDOT Item Numbers:

ITEM 402. Dense Graded Crushed Stone for Sub-base Cubic Yard

With the following Item Numbers:

ITEM 34 Dense Graded Crushed Stone for Sub-base Cubic Yard

SUBSECTION 482

SAWCUTTING (INCLUSIVE IN SOME ITEMS)

SUBSECTION 482.82 PAYMENT ITEMS

Replace the following MassDOT Item Numbers:

ITEM 482.3 Sawcutting Asphalt Pavement Linear Foot

With the following Item Numbers:

ITEM 35 Sawcutting Linear Foot

SUBSECTION 500

CURB AND EDGING

DESCRIPTION

SUBSECTION 501.20 GENERAL

Add the following at the end of this subsection:

Granite Curb shall be set in a concrete bed with asphalt patch as shown on the attached detail.

Sawcutting is required in advance of setting curb and is incidental to the item as described in subsection 501.8.

MATERIALS

SUBSECTION 501.40 GENERAL

Add the following at the end of this subsection:

M4 Cement Concrete (4,000 PSI)

CONSTRUCTION METHODS

SUBSECTION 501.65 FILLING ABOUT TRENCH

Replace this section with the following:

After the curb, curb corners, curb inlets, and edging is set, the space between it and the wall of the trench shall be filled to the height of the bottom of the existing asphalt layer (or as directed by engineer if no existing asphalt) on front and back of curbing with cement concrete (M4-4,000 psi). The front (road side) of the curbing trench shall then be filled, with hot mix asphalt installed in lifts no greater than two inches (2") and thoroughly compacted, to top of existing asphalt.

COMPENSATION

SUBSECTION 501.80 METHOD OF MEASUREMENT

Add the following at the end of this subsection:

No additional measurement shall be made Cement Concrete or Hot Mix Asphalt installed as part of the installation of Granite Curb.

SUBSECTION 501.81 BASIS OF PAYMENT

Add the following at the end of this subsection:

Cement Concrete and Bituminous Concrete shall be considered incidental to the item for Granite Curb with no additional payment made.

SUBSECTION 501.82

Replace the following MassDOT Item Numbers:

ITEM 504	Granite Curb Type VA4-straight	LINEAR FOOT
ITEM 504.1	Granite Curb Type VA4-curved	LINEAR FOOT
ITEM 514	Granite Curb Inlet-Straight	EACH
ITEM 570.2	Bituminous Concrete Curb Type 2	LINEAR FOOT
ITEM 580	Curb Removed and Reset	LINEAR FOOT
ITEM 581	Curb Inlet Removed and Reset	EACH
ITEM 594	Curb Removed and Discarded	LINEAR FOOT
ITEM 595	Curb Inlet Removed and Discarded	EACH

With the following Item Numbers:

ITEM36	Granite Curb Type VA4-straight	LINEAR FOOT
ITEM 37	Granite Curb Type VA4-curved	LINEAR FOOT
ITEM 38	Granite Curb Inlet-Straight	EACH
ITEM 39	Bituminous Concrete Curb Type 2	LINEAR FOOT
ITEM 40	Curb Removed and Reset	LINEAR FOOT
ITEM 41	Curb Inlet Removed and Reset	EACH
ITEM 42	Curb Removed and Discarded	LINEAR FOOT

ITEM 43 Curb Inlet Removed and Discarded EACH

**SUBSECTION 701
SIDEWALKS, WHEELCHAIR RAMPS AND DRIVEWAYS**

DESCRIPTION

SUBSECTION 701.20 GENERAL

Add the following at the end of this subsection:

Minimum clear path of travel for all walkways shall be no less than 52" per Town of Lexington Standards and as shown on the standard details.

MATERIALS

SUBSECTION 701.40 GENERAL

Add the following at the end of this subsection:

Fiber Mesh shall meet the following requirements;

Fiber mesh fibers (100% virgin polypropylene, collated, fibrillated fibers) at a rate of 1.0 - 1.5 lb. per cubic yard of concrete shall be added for reinforcement. Fiber mesh shall be FIBERMESH 150, manufactured by PROPEX Concrete Systems or an approved equal. Installation shall be per manufacturer's recommendations.

CONSTRUCTION METHODS

SUBSECTION 701.61 B. PLACING AND FINISHING CEMENT CONCRETE

Replace the second sentence of paragraph four with the following:

At driveways and wheelchair ramps, the sidewalks shall be 6 inches (200 mm) deep.

Add the following at the end of paragraph three:

Detectable warning panels shall be yellow unless otherwise indicate in the standard details.

Add the following to the end of this subsection:

All concrete shall be fiber reinforced.

Placement of cement concrete shall be completed no later than 2 P.M. on each day of operation to ensure proper set-up time before the end of the work day.

The Town of Lexington Engineering Division does not allow pouring of cement concrete sidewalks between November 1 and March 31. All sections prone to pedestrian and/or vehicular movement shall be protected, as necessary, until proper curing has occurred. All vandalized sections shall be replaced at contractor's expense.

SUBSECTION 701.62 HOT MIX ASPHALT SIDEWALKS AND DRIVEWAYS

Add the following to subsection 701.62 after paragraph 2:

The hot mix asphalt pavement shall be laid in courses with the top course 1 ½ inches after rolling and previous courses no greater than 2 inches after rolling and shall match the total thickness of the existing asphalt or as directed by the engineer. Prior to excavating for the sidewalk or driveway the area shall be sawcut the full depth of existing asphalt.

COMPENSATION

SUBSECTION 701.80 METHOD OF MEASUREMENT

Add the following to the end of this section:

Sawcutting shall be incidental to the items for sidewalks and roadway patches

Fiber reinforcement shall be incidental to all cement concrete items.

SUBSECTION 701.81 BASIS OF PAYMENT

Add the following to the end of this section:

Price adjustments for hot mix asphalt (all asphalt items under section 701) will be made in accordance with Document 00811 published by MassDOT revised July 8, 2016. Asphalt adjustment shall be documented on each invoice with no adjustment shown on invoice one. Invoice two will include the adjusted asphalt cost from the invoice one tonnage and so on. The contractor shall provide documentation and calculations demonstrating the proper adjustment. The base bid for liquid asphalt on this contract shall be the period price at the date of the bid opening as published by MassDOT on its website.

Fiber reinforcement shall be incidental to all cement concrete items.

Sawcutting shall be incidental to the items for sidewalks and roadway patches, but not for driveways.

SUBSECTION 701.82 PAYMENT ITEMS

Replace the following MassDOT Item Numbers:

ITEM 701.2 Cement Concrete Wheelchair Ramp

SQUARE YARD

ITEM 703 Hot Mix Asphalt Driveway

TON

ITEM 702 Hot Mix Asphalt Walk Surface

TON

With the Following Item Numbers:

ITEM 44 Cement Concrete Wheelchair Ramp

SQUARE YARD

ITEM 45 Hot Mix Asphalt Driveway

TON

ITEM 46 Hot Mix Asphalt Walk Surface

TON

**SUBSECTION 751
LOAM BORROW, PLANTABLE SOIL BORROW, PROCESSED PLANTING
MATERIAL OR TOPSOIL REHANDLED AND SPREAD**

CONSTRUCTION METHODS

SUBSECTION 751.63 PLANTABLE SOIL BORROW

Add the following at the end of this subsection:

Plantable Soil Borrow shall be placed at a compacted depth of no less than 4 inches.

COMPENSATION

SUBSECTION 751.80 METHOD OF MEASUREMENT

Replace the first sentence of this subsection with the following:

The quantity of Plantable Soil Borrow shall be measured in place after compaction to the limits specified on the plans, or as directed by the Engineer. When quantities of Plantable Soil Borrow are given in tons, a factor of 1.40 tons per cubic yard will be used to convert the measurement to cubic yards.

SUBSECTION 751.82 PAYMENT TERMS

Replace the following MassDOT Item Numbers:

ITEM 751 Loam Borrow	CUBIC YARD
ITEM 765 Seeding	SQUARE YARD

With the Following Item Numbers:

ITEM 47 Loam Borrow	CUBIC YARD
ITEM 48 Seeding	SQUARE YARD

**SUBSECTION 850
TRAFFIC/SAFETY CONTROLS FOR CONSTRUCTION
AND MAINTENANCE OPERATIONS**

DESCRIPTION

SUBSECTION 850.20 GENERAL

Add the following at the end of this subsection:

Work of this section shall also include Traffic Police Details and Fire Details as required for protection of the traveling public and working personnel during construction operations.

SUBSECTION 850.22 TRAFFIC CONES FOR TRAFFIC MANAGEMENT

Add the following at the end of this subsection:

Safety Signage for Construction Operations shall be used for all portions of the project.

SUBSECTION 850.33 PORTABLE CHANGEABLE MESSAGE SIGN

Add the following at the end of this subsection

Portable Changeable Message Sign consists of furnishing, positioning, repositioning, operating, maintaining, and removing a portable changeable message sign as needed and/or as directed by the Engineer. All messages displayed shall be approved by the Engineer prior to being displayed.

Add the following at the end of this subsection:

The Contractor shall supply **THREE (3)** such message boards for the duration of the project. These shall be incidental to the project. Additional message boards shall be paid for on an as needed basis determined by the Engineer.

Add this new subsection:

SUBSECTION 850.38 TRAFFIC POLICE DETAILS AND FIRE DETAILS

This work consists of scheduling Traffic Police Details when construction operations involve work which is of a nature where the use of a Traffic Police Detail would be required to increase safety of the general public and construction personnel.

This work also consists of scheduling Fire Details when construction operations involve blasting work. A Fire Detail will be required at all times explosives are present on site.

Scheduling of Details shall be made through the Contractor.

The Contractor is responsible for canceling Details directly in the event of schedule changes where work no longer requires the use of Details, or cancellations of work for any reason, including weather

MATERIALS

SUBSECTION 850.40 GENERAL

*Add emphasis in paragraph one sentence one to the wording “**must be in first class condition and acceptable to the engineer**”.*

All safety signage under this contractor shall be mounted on plywood as described in this subsection.

SUBSECTION 850.43 SAFETY SIGNING FOR TRAFFIC MANAGEMENT

Add the following at the end of this subsection:

All safety signage under this contractor shall be mounted on plywood as described in this subsection.

CONSTRUCTION METHODS

SUBSECTION 850.67: PAVEMENT MARKING REMOVAL

Existing pavement markings shall be removed to the fullest extent possible by an approved method. Pavement marking removal methods shall not cause damage to the pavement or cause drastic change in texture, which could be construed as delineation at night, and shall be approved by the Engineer. It is not permissible to paint over existing markings with black paint in lieu of removal. Approved methods include but are not limited to:

1. High pressure air.
2. High pressure water (cold weather use not permitted)
3. Sand blasting,

4. Mechanical devices such as grinders, sanders, scrapers, scarifiers and wire brushes.

Painting over a pavement marking line by use of asphaltic liquids or paints will not be permitted. Conflicting pavement markings shall be removed before any change is made in the traffic pattern.

Material deposited on the pavement as a result of removing markings shall be removed as the work progresses. Accumulations of sand or other material, which might interfere with drainage or could constitute a hazard to traffic, will not be permitted.

Any damage to the pavement or surfacing caused by pavement marking removal shall be satisfactorily repaired at no additional cost to the Department.

Where the removal operation is being performed near a lane occupied by traffic, a vacuum attachment operating concurrently with the removal operation must be in use. All residue shall be removed immediately from the surface being treated

COMPENSATION

SUBSECTION 850.80 METHOD OF MEASUREMENT

Add the following at the end of this subsection:

Traffic Police Details and Fire Details shall be paid actual man-hours, for which such services are rendered as required, as billed according to the Detail's union contract in effect at the time of work.

The Contractor shall be responsible for all payments of Traffic Police Details and Fire Details incurred when the Contractor is unable to cancel Details with a minimum of one hour notice, in the event of schedule changes where work no longer requires the use of Details, or cancellations of work for any reason, including weather. Such man-hours shall be billed directly to the Contractor, according to the Detail's union contract in effect at time of work, and shall be kept separate from man-hours to be reimbursed by the Owner, and in no case will such payments be reimbursed.

The allowance established in the Bid Form is for bidding purposes only. The actual invoiced rates and quantities may differ from these established rates.

Flaggers shall only be used when deemed necessary by the Engineer.

SUBSECTION 850.81 BASIS OF PAYMENT

Add the following at the end of this subsection:

Payment for Traffic Police Detail and Fire Detail shall be paid man-hours for services rendered as required, as measured in Subsection 850.80. Such man-hours shall be paid directly by the Contractor and reimbursed by the Town of Lexington for the amount billed and paid. Payment will not be made for man-hours the Contractor shall be responsible for, as stated in Subsection 850.80, METHOD OF MEASUREMENT. Evidence of payment of details by the contractor shall be provided to the town monthly to ensure payments are being made. Lack of payment or evidence may result in delays in processing invoices to the contractor or a work stoppage order to the contractor.

Payment for Portable Changeable Message Signs shall be for any additional signs beyond the three (3) signs that are included as incidental to the project.

Pavement Marking Removal will be paid for at the contract unit price per square foot which shall provide full compensation for removing existing markings including any necessary repairs to the roadway surface.

SUBSECTION 850.82 PAYMENT ITEMS

Replace the following MassDOT Item Number:

ITEM 850.41 Roadway Flagger	HOUR
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ITEM 999 Police Detail	HOUR
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ITEM 850.67 Pavement Marking Removal	
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With the Following Item Numbers:

ITEM 49 Roadway Flagger	HOUR
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ITEM 50 Police Detail	HOUR
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ITEM 51 Pavement Marking Removal	SQUARE FOOT
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SUBSECTION 201 BASINS, MANHOLES AND INLETS

MATERIALS

201.40 GENERAL

Add the following at the end of this subsection:

Clay brick conforming to Section M4.05.2 of the Standard Specifications shall be used to adjust all manholes and catch basin frames and grates or covers to grade. For sewer manholes, Grade SS bricks shall be used for sewer inverts and shelves. Grade MS bricks shall be used for other locations.

Castings shall be as follows, or as directed by the Engineer:

- All Manhole Cover Frames shall be as manufactured by EJ a.k.a. East Jordon Iron Works meeting the following: EJIW product #00211111 (0MA211000038, 8 inch depth) Upon approval of the engineer 6-inch frames may be utilized in defined locations and shall meet the following EJIW product #00226611 (0MA226000002, 6 inch depth)
- Drain Manhole Covers shall be EJIW 0MA211000041 or approved equal
(The word DRAIN in 2-inch, flat face, gothic letters shall be cast into the cover)
- Sewer Manhole Covers shall be EJIW 0MA211000040 or approved equal
(The word SEWER in 2-inch, flat face, gothic letters shall be cast into the cover)
- Catch Basin Frames with 3 flanged sides shall be EJIW product #00554813 (0MA554000005, 8-inch deep) or approved equal. Upon approval of the engineer 6-inch frames may be utilized in defined locations and shall meet the following 0MA554000003, 6 inch depth.

- Catch Basin Frames with 4 flanged sides shall be EJIW product #00554811 (0MA554000006, 8-inch deep) or approved equal. Upon approval of the engineer 6-inch frames may be utilized in defined locations and shall meet the following 0MA554000004, 4 inch depth.
- Double Catch Basin Frames with 3 flanged sides shall be EJIW product #00554814 (0MA544000001, 8-inch deep) or approved equal. Upon approval of the engineer 4-inch frames may be utilized in defined locations and shall meet the following 0MA544400106, 4 inch depth.
- Double Catch Basin Frames with 4 flanged sides shall be EJIW product #00554812(0MA544000002, 8-inch deep) or approved equal. Upon approval of the engineer 4-inch frames may be utilized in defined locations and shall meet the following 0MA544400012, 4 inch depth.
- Catch Basin Grates shall be EJIW product #0055284 (0MA552000076) or approved equal for Cascade Left or product #0055285 (0MA552000077) or approved equal for Cascade Right (The words DUMP NO WASTE in 1/2-inch, letters shall be engraved into the edge of grate along one side)
- Frames and grates or covers will be paid for at the contract unit price each under the items for furnishing and delivering new frames and grates or covers.

SUBSECTION 201.82 PAYMENT ITEMS

Replace the following MassDOT Item Number:

Item 221 Frame & Cover	Each
Item 222 Frame & Grate	Each
Item 222.10 Frame & Grate Cascade Type	Each

With the Following Item Numbers:

Item 52 Frame & Cover	Each
Item 53 Frame & Grate	Each
Item 54 Frame & Grate Cascade Type	Each

SUBSECTION 860 REFLECTORIZED PAVEMENT MARKING

MATERIAL

Add the following to the beginning of this subsection

860.40: GENERAL

Work under these items cover white and yellow epoxy reflectorized pavement striping material that is sprayed onto the pavement. As work incidental to these items the

Contractor shall furnish to the Department one portable spectrophotometer and one replacement calibration standard with the Department taking ownership of these pieces of equipment. The spectrophotometer shall be delivered to the Research and Materials headquarters at the beginning of line striping work. Following a surface application of glass beads and upon drying, the resultant marking is a reflectorized stripe of specified thickness and width, that is capable of resisting deformation by traffic. Work under these items shall conform to the relevant provisions of Section 860 of the Standard

A. REGULAR-DRY EPOXY SUGGESTED SUPPLIERS

Epoplex LS50	SUPPLIER/LOCATION Epoplex - Stonhard Inc Maple Shade, NJ
Hotline TM 8212 (Part A White) Hotline TM 8213 (part A Yellow) Hotline TM 8214 (Part B Hardener or Converter)	Baltimore Paint and Chemical Co. Division of Sherwin-Williams Baltimore, MD Edison, NJ
Lumiline, Lumiline II	Accent Stripe, Inc Orchard Park, NY Poly-Carb Inc.
Poly-Carb Mark 55.3	Solon, OH
Super Lifeline II, III	Linear Dynamics Ball Ground, GA
Thermopoxy Series 100 Part A (Series 101 White) Part A (Series 102 Yellow) Part B (Series 103)	Technical Coatings Corp Alpharetta, GA

B. Epoxy Material

1. Composition.

The epoxy resin composition shall be specifically formulated for use as a pavement marking material and for hot-spray application at elevated temperatures. The type and amounts of epoxy resins and curing agents shall be at the option of the manufacturer, providing the other composition and physical requirements of this specification are met.

The epoxy marking material shall be two-component (Part A and Part B), 100% solids type system formulated and designed to provide a simple volumetric mixing ratio (e.g. two volumes of Part A to one volume of Part B).

The epoxy marking material shall be supplied as either a regular-dry or a slow-dry material. Regular-dry may be used for all marking patterns. Slow-dry material is intended for marking hatchlines, edgelines, and other marking patterns located out of the general path of traffic.

All acceptances of uninstalled epoxy marking material shall expire six (6) months after the date of manufacture.

TOWN OF LEXINGTON, MASSACHUSETTS

Part A of both white and yellow shall conform to the following requirements:

PERCENT BY WEIGHT OF PART A .

WHITE	Pigment - 18 Minimum, Titanium Dioxide (ASTM D476, Type II) Epoxy Resin - 75 to 82
YELLOW	Pigment - 18 Minimum, Titanium Dioxide (ASTM D476, Type II) 5 Minimum, Organic Yellow, Epoxy Resin – 73 to 77

The entire pigment composition shall consist of either titanium dioxide or titanium dioxide and organic yellow. No extender pigments are permitted. Yellow pigment shall be lead-free.

The epoxy content of the epoxy resin in Part A will be tested in accordance with ASTM D 1652 and calculated as the weight per epoxy equivalent (WPE) for both white and yellow. The epoxy content will be determined on a pigment free basis. The epoxy content (WPE) shall meet a target value provided by the manufacturer and approved by the Department. A ± 50 tolerance will be applied to the target value to establish the acceptance range.

The amine value of Part B shall be tested in accordance with ASTM D2074(2) to determine its total amine value. The total amine shall meet a target value provided by the manufacturer and approved by the Department. A ± 50 tolerance will be applied to the target value to establish the acceptance range. The manufacturer may specify an alternate test method for determining the amine value subject to the approval of the Department.

2. Physical Properties of Mixed Components (Part A and Part B).

Unless otherwise noted, all samples are to be prepared tested at an ambient temperature of $73 \pm 3^{\circ}\text{F}$.

a. Color.

Yellowness Index (ASTM D-1925).

- cure 72 hours after sample preparation
- Take yellow index reading, XYZ C/2°, following 72 hour cure and preceding QUV
- Maximum index before QUV: 8.0
- Place sample in QUV for 72 hours
- Maximum index after QUV: 20

Typical White Standard

X7805

Z90.4

Y14.7

Typical Yellow Standard

X52.7

Y48.1

Z7.6

b. Directional Reflectance.

The white epoxy composition (without glass spheres) shall have a daylight directional reflectance of not less than 84% relative to a magnesium oxide standard when tested in accordance with ASTM E1347.

The yellow epoxy composition (without glass spheres) shall have a daylight directional reflectance of not less than 55 % relative to a magnesium oxide standard when tested in accordance with ASTM E 1347.

c. Drying Time (Laboratory).

When tested in accordance with ASTM D711 as modified below, regular-dry epoxy marking material shall reach a no-pick-up time in 30 minutes or less. Under these same test conditions, slow-dry epoxy marking material shall reach a no-pick-up time in 60 minutes or less. A Bird Applicator or other suitable instrument shall be used to spread a nominal 15 ± 1 mil thick wet film. Reflective glass spheres shall be immediately dropped onto the epoxy film at a rate of 18 pounds per gallon.

d. Drying Time (Field).

When installed at 77°F at the specified wet film thickness and reflectorized with glass spheres, regular-dry and slow-dry epoxy markings shall reach a no-track condition in approximately 30 minutes, and 60 minutes, respectively.

Dry to "no-tracking" shall be considered as the condition where no visual deposition of the epoxy marking to the pavement surface is observed when viewed from a distance of 50 feet, after a passenger car is passed over the line.

e. Hardness.

The epoxy composition when tested in accordance with ASTM D2240 shall have a Shore D hardness of between 75 and 100. Samples shall be allowed to cure for not less than 72 hours nor more than 96 hours prior to testing.

f. Infrared Spectrophotometer Analysis (ASTM D2621).

Samples of Part A and Part B shall be analyzed by infrared spectrography. The spectrum of each component shall be a reasonable match to the spectrum of the original formulation accepted by the Department.

C. Reflective Glass Spheres.

Reflective glass spheres for drop-on application shall conform to the following requirements:

The glass spheres shall be colorless, clean, transparent, free from milkiness or excessive air bubbles, and essentially clean from surface scarring or scratching. They shall be spherical in shape and at least 80 % of the glass beads shall be true spheres when tested in accordance with ASTM is D-1155, Procedure A. The

refractive index of the spheres shall be a minimum of 1.5 as determined by the liquid immersion method at 77°F.

DOUBLE DROP METHOD

TYPE I		TYPE II	
Sieve Opening Retained	% Retained	Sieve Opening Retained	% Retained
No. 10	0	No. 20	0 - 5
No. 12	0 - 5	No. 30	5 - 20
No. 14	5 - 20	No. 50	30 - 50
No. 16	40 - 80	No. 80	9 - 32
No. 18	10 - 40	No. 100	0 - 5
No. 20	0 - 5	Pan	0 - 2
Pan	0 - 2		

The silica content of the glass spheres shall not be less than 60 % .

The glass spheres shall have the following gradation when tested in accordance with ASTM D-1214.

The glass spheres, Type I, shall be coated with a silane-type adherence coating to enhance embedding in and adherence to the applied binder film. The coated beads shall emit a yellow-green fluorescence when tested by the Danayl Chloride test procedure. The Type II glass spheres shall be treated with a moisture-proof coating. The beads shall show no tendency to adsorb moisture in storage and shall remain free of clusters and lumps. The beads shall flow freely from the dispensing equipment at any time when surface and atmospheric

conditions are satisfactory for marking operations. The moisture-resistance of the glass spheres shall be determined on the basis of the following test:

Place one kilogram of spheres in a washed cotton bag having a thread count of approximately 52 per square inch (warp and woof) and immerse the bag in a container of water for 30 seconds. Remove the bag and force excess water from the sample by squeezing the bag. Suspend and allow to drain for two hours at room temperature ($73 \pm 2^{\circ}\text{F}$). Then mix the sample in the bag by shaking thoroughly. Pour the sample slowly into a clean, dry glass funnel having a stem 4 inches in length, with a 0.4 inch inside diameter stem entrance opening and a minimum exit opening of 0.25 inches. The entire sample shall flow freely through the funnel without stoppage. When first introduced into the funnel, if the spheres clog, it is permissible to lightly tap the funnel to initiate the flow.

Reflective glass spheres may be accepted at the job site on the basis of the manufacturer's certification, or they may be submitted to the Research and Materials Laboratory for testing.

D. Packaging and Shipment.

Epoxy pavement marking materials shall be shipped to the job site in strong, substantial containers. Individual containers shall be plainly marked with the following information:

1. Name of Product
2. Item Number
3. Lot Number
4. Batch Number
5. Test Number
6. Date of Manufacture
7. Date of Expiration of Acceptance (6 months from date of manufacture)
8. The Statement (as appropriate): "Part A - Contains Pigment and Epoxy Resin," or "Part B - Contains Catalyst"
9. Quantity
0. Mixing Proportions, Application Temperature and Instructions
10. Safety Information
1. Manufacturer's Name and Address

Reflective glass spheres shall be shipped in moisture resistant bags. Each bag shall be marked with the name and address of the manufacturer and the name and net weight of the material.

EQUIPMENT AND APPLICATION REQUIREMENTS

E. STRIPING EQUIPMENT

The equipment shall have a system capable of spraying the epoxy paint in the manufacturer's recommended proportions and be mounted on a truck of sufficient size and stability, and with an adequate power source to produce lines of uniform dimension

and prevent application failure. It shall be capable of placing stripes on the left and right sides and of placing two intermittent lines simultaneously. It shall also be capable of applying glass beads at the rate of 25 pounds per gallon. All guns must be in full view of the operator at all times. The equipment shall be provided with a metering device to register the accumulated installed footage for each gun each day. Each vehicle shall include at least one operator who shall be a technical expert in equipment operations and epoxy application techniques.

Equipment shall have such a design that the pressure gauges for each proportioning pump are constantly visible to the operator at all times during its operation so that any fluctuation and pressure difference can be addressed immediately.

SURFACE PREPARATION

The pavement surface on which the epoxy paint material is placed shall be clean and dry. Existing traffic markings shall be removed by blasting or grinding. The curing compound on Portland cement concrete shall also be removed. Existing markings shall be removed so that at least 95% of the underlying pavement is visible. The abrasive material shall be removed from the pavement surface before the pavement is opened to uncontrolled traffic flow.

F. APPLICATION

1. Epoxy

The epoxy paint markings shall have a thickness of 25 mils \pm 1 mil, calculated without drop-on glass beads. All markings shall have uniform thickness with a uniform distribution of glass beads throughout the line width. The width of lines shall be as specified with a tolerance of 0.25 inches. Markings shall have sharp edges and cutoff at the ends.

2. Glass Beads

The glass beads shall be applied by the double drop method, which requires that Type I and Type II reflective glass spheres be injected into or dropped onto the liquid epoxy marking. Each type shall be applied simultaneously, at a minimum rate of 10 to 13 pounds per gallon of resin with a minimum total application of 25 pounds per gallon. Type I beads shall be applied first, immediately followed by Type II beads. The beads shall adhere to the cured epoxy or all marking operations shall cease until corrections are made.

3. Temperature Limitations

During marking operations, the pavement surface where the epoxy is to be placed shall have a minimum temperature of 40° F and the air temperature shall be at least 35° F. The pavement surface temperature ,and the air temperature shall be determined at the start of each day of marking operation and at any time

deemed necessary by the Engineer. The spraying temperatures shall be in accordance with the manufacturer's recommendations.

4. Application Rates

Application rates will be checked by the Engineer at convenient intervals by comparing tallies of materials used to the length of lines placed. For initial application and occasionally during the course of work, the Engineer may also check application to a pre-weighed sheet specifically placed for test purposes. Drop-on spheres shall not be applied in this test.

5. Protecting Newly installed Markings

Newly installed markings shall be protected from tracking during the setting period by one or more of the following methods:

- 1) Cone off wet lines from traffic
- 2) Use a convoy of moving vehicles to prevent traffic from crossing wet lines
- 3) Saturate lines with glass beads to prevent tracking.

POR TABLE SPECTROPHOTOMETER FOR MEASURING COLOR SPECIFICATION

Use

Perform objective color measurements of road signs, pavement markings, barricades, and other traffic safety devices for the purpose of acceptance, approval or maintenance.

Measurement Parameters

Geometry: The spectrophotometer shall have a measurement geometry of 45° circumferential (illumination) and 0° (observation).

Spectral Range: The instrument shall have a spectral range of 400 to 700 nm.

Spectral Interval: The instrument shall have a spectral interval output of 20 nm. The internal computation spectral interval shall be 5nm.

Photometric Range: The instrument shall have a photometric range of 0 to 100% with a resolution of 0.01.

Standards: The instrument shall conform to the following standards:

DIN 5033, 5036, 6174

ISO 7724

ASTM D2244, E308, E313, E1164 Calibration

Calibration Standards: The instrument shall be supplied with one durable white traceable calibration standard. The instrument shall also be supplied with one black and one green durable calibration standards.

CONSTRUCTION METHODS

Basic Construction: The instrument shall be rigidly constructed to maintain a fixed geometry and must not contain any foldable or collapsible parts.

Illumination: the instrument shall utilize an LED lamp system for sample illumination.

This lamp system shall consist of 30 individual LED's. There shall be 3 LED's per color oriented at 120 degrees from each other to provide accurate light control and a larger sample port size.

The illumination system shall not raise the temperature of the sample being measured either during a single measurement or during multiple, repeated measurements.

Dimensions: The instrument's physical dimensions shall be 3.75 inches wide, 3.5 inches tall and 7 inches long. The instrument shall weigh 32 ounces.

Power Source: The instrument shall be powered by four AA size alkaline, NiCd or MH batteries. The instrument shall be capable of taking at least 5000 measurements on one set of fully charged batteries.

Use and Control

Display: The instrument shall use a 2.4 x 1.2 inch liquid crystal display, 126 x 64 pixels.

Illuminants: The instrument shall be able to measure samples with type A, C, D65, F2, F7, and F11 illuminants.

Observers: The instrument shall be able to measure samples with 2° and 10° observer.

Display Modes: The instrument shall be capable of operating in several different modes including:

Absolute color data

Pass/Fail

Color difference

Metamerism

Spectral Curve Color Systems: The instrument shall be capable of measuring and displaying

color data with different color systems including:

CIELab	XYZ
CEILCh/H	RxRyRz
Lab(h)	

Indices: The instrument shall be capable of measuring and displaying different color indices including:

YIE313	Berger
YID1925	Color Strength
WIE313	Opacity
CIE	Metamerism MI

Color Differences: The instrument shall be able to measure and display color differences including:

Delta E*	Delta E₉₄
Delta E(h)	Delta ECMC
Delta EFMC2	

Data Storage: The instrument shall utilize internal, memory for storing measurement data. The instrument shall be capable of storing approximately 1000 samples. In addition, the instrument shall be capable of storing approximately 200 standards. A 15-year lithium battery shall independently power the data memory.

Data Output: The instrument shall be equipped with a data port to allow for data output directly to a printer or WindowsTM applications.

Equipment

The instrument shall be equipped complete with a user's manual, batteries, carrying case, black calibration standard, white calibration standard, green calibration standard, sample area locator, PC interface cable with adapter, wrist strap, and a color theory guide.

One manufacturer of the above piece of equipment is BYK-Gardner Color Guide Portable Spectrophotometer Cat# 530160. The additional set of calibration standards may be obtained from Flint Trading, Inc., Thomasville, NC (Tel 336475-6600).

860.82 PAYMENT ITEMS

*Insert the following in numerical order
Replace the following MassDOT item numbers*

TOWN OF LEXINGTON, MASSACHUSETTS

ITEM 868.04	4" Reflectorized White Line (EPOXY)	LINEAR FEET
ITEM 868.12	12" Reflectorized White Line (EPOXY)	LINEAR FEET
ITEM 868.13	18" Reflectorized White Line (EPOXY)	LINEAR FEET
ITEM 869.04	4" Reflectorized Yellow Line (EPOXY)	LINEAR FEET

With the following numbers

ITEM 55	4" Reflectorized White Line (EPOXY)	LINEAR FEET
ITEM 56	12" Reflectorized White Line (EPOXY)	LINEAR FEET
ITEM 57	18" Reflectorized White Line (EPOXY)	LINEAR FEET
ITEM 58	4" Reflectorized Yellow Line (EPOXY)	LINEAR FEET

**SUBSECTION 101
CLEARING AND GRUBBING**

CONSTRUCTION METHODS

101.61 CLEARING AND GRUBBING

Add the following at the end of this subsection:

The Contractor may use any equipment, materials or labor as he deems necessary, with no additional measurement or payment to be made.

COMPENSATION

101.80 METHOD OF MEASUREMENT

Replace paragraph six with the following;

Tree trimming will be measured per each tree trimmed, which includes full compensation for all labor, materials, equipment, apparatus, tools and incidentals necessary for the satisfactory completion of the work.

101.81 BASIS OF PAYMENT

Add the following after this first sentence of this subsection.

All labor, material and equipment required to perform Clearing and Grubbing shall be considered incidental to the bid item, with no additional measurement or payment to be made.

Replace paragraph six with the following;

Tree trimming shall be paid for at the contract unit price per each tree trimmed, which price

TOWN OF LEXINGTON, MASSACHUSETTS

shall include full compensation for all labor, materials, equipment, apparatus, tools and incidentals necessary for the satisfactory completion of the work.

101.82 PAYMENT ITEMS

Replace the following MassDOT Item Numbers:

ITEM 101	CLEARING AND GRUBBING	ACRE
ITEM 102.12	TREE TRIMMING	EACH

With the Following Item Numbers:

ITEM 59	CLEARING AND GRUBBING	ACRE
ITEM 60	TREE TRIMMING	EACH

END OF SPECIAL PROVISIONS

NO APPENDICES